



OECD Skills Studies

Skills in Latin America

INSIGHTS FROM THE SURVEY OF ADULT SKILLS
(PIAAC)



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Foreword

Latin America and the Caribbean (LAC) is a land of untapped potential. The region is young, offering a unique demographic window of opportunity for inclusive growth in the region, with education being a key driver of growth to support future progress. The social and economic progress of the last decades led to increased access to education, but much remains to be done to improve the equity and quality of that education.

The Organisation for Economic Co-operation and Development (OECD) has been working closely with Latin American countries on education and skills for over three decades. The OECD helps countries identify and develop the knowledge and skills that drive better jobs and promote social inclusion. We also encourage countries to learn from each other and support policy implementation, monitoring and evaluation. Insights from the OECD Programme for International Student Assessment (PISA), from the Teaching and Learning International Survey (TALIS) and now from the Survey of Adult Skills (PIAAC), evaluate the quality, equity and efficiency of school systems, as well as adult training, around the world and are instrumental to helping address many of the region's challenges. The collaboration among Latin American countries and the OECD is growing stronger, with Chile, Ecuador, Mexico and Peru participating in the OECD Survey of Adult Skills (PIAAC) and ten Latin American countries – Argentina, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Mexico, Panama, Peru and Uruguay – participating in PISA. But the evidence that PISA and PIAAC have produced goes well beyond statistical benchmarking. By identifying the characteristics of high-performing education systems, and the skills of those in the labour market, these international evaluations allow Latin American governments and educators to identify effective policies that can be adapted to their regional contexts.

Since the launch of *Skills in Ibero-America: Insights from PISA 2012 and 2015* and the *Teachers in Ibero-America: Insights from PISA and TALIS* in 2018, this is the first PIAAC report that focuses on the region. It uses the most recent regional OECD data, mainly building from PIAAC Cycle 1 (2011-17) and PISA 2018 results, and shows the paths taken by young people at the start of their adult lives, as well as the lifelong impact that the quality of education can have.

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The Survey of Adult Skills (PIAAC) is a collaborative endeavour involving the participating countries, the OECD Secretariat, the European Commission and an international Consortium led by Educational Testing Service (ETS). The development and implementation of the project is steered by the PIAAC Board of Participating Countries.

The development of this report, prepared by the Education and Skills Directorate (EDU) of the OECD, was guided by Andreas Schleicher and managed by Marta Encinas-Martín. The authors of this report are Marta Encinas-Martín, Anthony Mann, Marco Paccagnella, Michelle Cherian and Jonathan Díaz from the OECD, Johanna Fajardo-González from the United Nations Development Programme and Alexandria Valerio and Marcela Gutierrez-Bernal from the World Bank, with statistical support from François Keslair from the OECD, Carla Solis and Samahara Hernández from the World Bank. Andreas Schleicher was the author of the Editorial for this report. Sally Hinchcliffe edited this report and Sabrina Leonarduzzi provided valuable support in the editing, design and production process.

Editorial

By Andreas Schleicher, Director for Education and Skills, OECD

Better skills, better jobs, better lives

Everywhere, skills transform lives, generate prosperity and promote social inclusion. And if there is one lesson the 2008 global financial crash taught Latin America, it is that we cannot simply bail ourselves out of an economic crisis or solely print cash to stimulate growth. A much stronger bet for countries to grow and develop in the long run is to equip more people with better skills. This enables people to collaborate, compete and connect in ways that drive their lives and countries forward. While formal education has expanded rapidly in much of Latin America over the last decade, the region still lags far behind in terms of labour-market knowledge and skills. This has become a major constraint for economic and social development in Latin America, as this report shows.

What people know and what they do with what they know has a major impact on their life chances. On average, workers scoring highly in OECD's Survey of Adult Skills have a median hourly wage more than 60% higher than those who score poorly. Those with low literacy skills are also more than twice as likely to be unemployed. This impact goes far beyond earnings and employment. In the countries surveyed, individuals with poorer foundation skills are far more likely than those with advanced literacy skills to report poor health, to believe that they have little impact on political processes and to not participate in associative or volunteer activities.

So in one way, skills have become the global currency of 21st-century economies. But this "currency" can depreciate as labour markets evolve and individuals lose skills they do not use. For skills to retain their value, they must be continuously developed throughout life.

Furthermore, the toxic coexistence of Latin American graduates who cannot find good jobs, and employers in the region who say they cannot find the people with the skills they need, underlines that more education does not automatically translate into better economic and social outcomes. To convert education into better jobs and lives, we need to better understand which skills drive outcomes, ensure that the right skill mix is learned at the right time and help economies to make good use of those skills.

The essential starting point for that is to better anticipate and respond to the evolution of skill demand in societies. The dilemma for educators today is that the kind of skills that are easiest to teach and test, are also the skills that are easiest to digitise, automate and outsource. Put simply, in a world where Google and ChatGPT seemingly know everything, people are no longer rewarded for just having knowledge but for what they can do with what they know. Government and business in Latin America need to work together to gather better evidence about skill demand, present and future, which can then be used to develop up-to-date instructional systems and to inform education and training systems.

During the past few decades there have been major shifts in the economic underpinnings of countries in Latin America. In the past, education was about teaching people something. Now, it's about making sure that individuals develop a reliable compass and the navigation skills to find their own way through an

increasingly uncertain, volatile and ambiguous world. These days, we no longer know exactly how things will unfold, often we are surprised and need to learn from the extraordinary, and sometimes we make mistakes along the way. And it will often be the mistakes and failures, when properly understood, that create the context for learning and growth. A generation ago, teachers could expect that what they taught would last for their students' lifetimes. Today, schools need to prepare students for more rapid social change than ever before, for jobs that have not yet been created, to use technologies that have not yet been invented, and to solve social problems that we don't yet know will arise.

Conventionally our approach to problems was breaking them down into manageable bits and pieces, and then to teach students the techniques to solve them. But today we create value by synthesising the disparate bits. This is about curiosity, open-mindedness, making connections between ideas that previously seemed unrelated, which requires being familiar with and receptive to knowledge in other fields than our own. If we spend our whole life in a silo of a single discipline, we will not gain the imaginative skills to connect the dots where the next invention will come from.

The world is also no longer divided into specialists and generalists. Specialists generally have deep skills and narrow scope, giving them expertise that is recognised by peers but not valued outside their domain. Generalists have broad scope but shallow skills. What counts increasingly are the versatilists who are able to apply a depth of skill to a progressively widening scope of situations and experiences, gaining new competencies, building relationships and assuming new roles. They are capable not only of constantly adapting but also of constantly learning and growing, of positioning themselves and repositioning themselves in a fast-changing world.

OECD's Learning for Jobs analysis also shows that skill development is far more effective if the world of learning and the world of work are linked. Compared to purely government-designed curricula taught exclusively in schools, learning in the workplace allows people to develop "hard" skills on modern equipment, and "soft" skills such as teamwork, communication and negotiation through real-world experience. The data also suggest that hands-on workplace training is an effective way to motivate disengaged youth to re-engage with education and smoothen the transition to work. Countries with effective school-work programmes reduce school dropout rates by offering more relevant education and second-chance opportunities, and by offering work experience to young people before they leave education.

But learning the right things is just one part of the equation. It is equally important for young people to develop a good understanding of how and where skills can be put to good use. This report shows that students are often confused and uncertain when it comes to career pathways. This is not surprising. The rise of digitalisation and automation, the marketisation of post-secondary education and training, green economy initiatives, and the fallout from the COVID-19 pandemic, have all led to a rapidly changing demand for skills. At the same time, labour markets have become more complex and harder to navigate. But the report also provides clear answers to how public policy can address this challenge. It highlights three broad groups of predictors which relate to the means by which career-related human, social and cultural accumulations can be enabled. This is about providing opportunities for children and youth to explore the future, such as through guidance activities that enable students to engage with people in work and to reflect on and discuss their emerging perspectives. It is also about opportunities for youth to experience the future, such as through first-hand experiences of workplaces like volunteering and part-time employment. And it involves thinking about the future, which relates to a range of attitudes that reflect more mature career thinking linked to educational decisions which OECD data show is enhanced through participation in exploring and experiencing work activities. The report shows that in most Latin American countries young people have had very limited access to effective career guidance provision by the age of 15. The career aspirations of students are commonly highly concentrated, frequently bear little relationship to actual patterns of labour-market demand and reveal consistent patterns of concern in relation to lower achievers and students from more disadvantaged social backgrounds. Engagement with people in work through career guidance systems is often limited. All this needs to change, not only to facilitate smooth

school-work transitions, but also to motivate young people to learn what matters for their future. Young people cannot be what they cannot see, and they often make the most important career decisions not when they leave school, but when they start school. This is the moment when children decide whether investing time and energy in learning is worth it and which subjects they will take seriously. To aid this, schools need to help students understand their talents, the skills where they can really improve, and the most important skills for work and life. Girls and students from the most disadvantaged backgrounds have the most to gain from more effective career guidance. Some countries also have effective active labour-market measures, such as counselling, job-search assistance and temporary hiring subsidies for low-skilled youth; they link income support for young people to their active search for work and their engagement in measures to improve their employability.

As the report shows, the choices made by young people at the start of their adult lives – whether to stay in education, and when to cohabit or start a family – often have a lifelong impact. Those with lower skills are more likely to move in with a partner and have children earlier, particularly among girls. Latin American countries have much higher teenage pregnancy rates than the OECD average, and this is especially the case for girls with lower skills. Women of all ages are also much more likely to be single parents than men, although the link with proficiency is less clear than in OECD countries. Supporting young women to stay in education and make sound choices in their transition to the labour market will help them achieve better work outcomes for themselves and the next generation.

Ambitious education and training provide the central foundation for a successful career in later life but are only a part of skills development. Working-age adults also need to develop their skills so that they can progress in their careers, meet the changing demands of the labour market and don't lose the skills they have already acquired. But, as the report shows, this is more of a challenge in Latin America than in OECD countries because intergenerational skill differentials are often very large. To improve skills, a wide spectrum of full- or part-time adult-learning activities needs to be available: from work-related employee training, formal education for adults, second-chance courses to obtain a minimum qualification or basic literacy and numeracy skills, language training for immigrants, and labour-market training programmes for job seekers, to learning activities for self-improvement or leisure.

There are many ways to dismantle barriers to participation in continued education and training. First, increase people's motivation by making the benefits of adult education and training more transparent. Governments can provide better information about the economic benefits (higher wages, increased employment opportunity and productivity) and non-economic benefits (including boosted self-esteem and increased social interaction) of adult learning.

Second, less-educated individuals can be unaware of education and training opportunities or may find the available information confusing. A combination of easily searchable, up-to-date online information could help this, as well as personal guidance and counselling services to help individuals define their own training needs and identify appropriate programmes. Information about possible funding sources would also benefit individuals.

Third, clear certification of learning outcomes and recognition of non-formal learning are also incentives for training. Transparent standards, embedded in a framework of national qualifications, should be developed alongside reliable assessment procedures. Recognition of prior learning can also reduce the time and cost involved to obtain a given qualification.

Fourth, it is important to ensure that programmes are flexible and relevant to users, both in content and in how they are delivered to adapt to adults' needs. A number of countries have recently introduced one-stop shop arrangements, with different services offered in the same institution. This approach is particularly cost effective as it consolidates infrastructure and teaching personnel and makes continuing education and training more convenient. Distance learning and an open educational resources approach have significantly improved users' ability to adapt their learning to their lives.

All this being said, building skills is still the easier part; far tougher is providing opportunities for young people to use their skills, as the last chapter of this report highlights. In many Latin American countries, employers may need to offer greater flexibility in the workplace. Labour unions may need to reconsider their stance on rebalancing employment protection for permanent and temporary workers. Enterprises need reasonably long trial periods to enable employers giving youth who lack work experience a chance to prove themselves and transition to regular employment. The bottom line is that unused human capital represents a waste of skills and investment. As the demand for skills changes, unused skills can become obsolete, and skills that are unused during inactivity are bound to atrophy over time. Conversely, the more individuals use their skills and engage in complex and demanding tasks, both at work and elsewhere, the less likely that skills will decline due to aging.

But even developing skills and making them available to the labour market will not have the desired impact on the economy and society if those skills are not used effectively. This report shows that skills mismatch is a serious challenge that is mirrored in people's earnings prospects and in their productivity. Knowing which skills are needed in the labour market and which educational pathways will get young people to where they want to be is essential. Skills mismatch on the job can be a temporary phenomenon: sometimes, for example, the demand for skills takes time to adjust to the fact that there is a larger pool of highly skilled workers available. Thus, not all types of skills mismatch are bad for the economy. Skills surpluses, which can result from an underuse of skills in specific occupations, can serve as a skills reserve that may be used in other, more advanced jobs and for building knowledge economies over the long term. However, the mismatch between workers' skills and their tasks at work can adversely affect economic and social outcomes. The underutilisation of skills, in specific jobs in the short to medium term, can be a problem because it may lead to skills loss. Workers whose skills are underused in their current jobs earn less than those who are well matched to their jobs. They also tend to be less satisfied at work. This situation can generate higher employee turnover, which is likely to affect a firm's productivity. Underskilling is also likely to affect productivity and, as with skills shortages, slow the rate at which more efficient technologies and approaches to work are adopted.

Successful entry into the labour market at the beginning of a professional career has a profound influence on later working life. The "scarring effects" of a poor start can make it difficult to catch up later. Strong basic education, in conjunction with vocational education and training programmes that are relevant to the needs of the labour market, tend to smooth the transition from school to work; so do hiring and firing rules that do not penalise young people compared with other groups, and financial incentives that make it viable for employers to hire young people who require on-the-job training. Such policies can help to prevent skills mismatch and unemployment later on.

Finally, none of this will work unless skills become everyone's business. Countries need to take a hard look at how learning is funded. Put simply: who should pay for what, when and how. Governments can design financial incentives and tax policies that support post-compulsory education and training. Education systems need to foster entrepreneurship as well as offer vocational training. Employers can invest in learning while labour unions can work to ensure those investments lead to better-quality jobs and higher salaries. And individuals must take better advantage of learning opportunities when they are offered

Many Latin American countries are still fighting a recession in the aftermath of the pandemic, but the cost of low skills is high, and the equivalent of a permanent economic recession. That is why it is vital for governments to invest in education and work with partners to raise standards. Policy makers must not let children slip through the cracks. A lack of focus on improving education will only lead to a rise in human, social and economic costs – and permanently leave children, families and communities worse off.

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Executive summary

Human capital is a key determinant of success for individuals and economies alike. Literacy and numeracy are key foundations for higher-order cognitive skills, while solving problems in technology-rich environments is increasingly important, as information and communications technology (ICT) spreads into all aspects of life. Despite remarkable recent increases in enrolment and educational attainment, the countries of Latin America and the Caribbean (LAC) lag behind in skills development among both secondary school students and the wider adult population. Young adults are still struggling in the labour market, while employers report skill shortages are a barrier to business. As countries in the region seek to shift their economies into higher value-added activities to escape the “middle-income trap”, they will need to improve the skills of their working-age population across the board.

This report uses data from the first cycle of the Survey of Adult Skills, part of the Programme for the International Assessment of Adult Competencies (PIAAC), conducted in 39 countries and economies, including four in Latin America: Chile (2014-15) and Ecuador, Mexico and Peru (2017). It has also drawn on data from the Programme for International Student Assessment (PISA), which surveyed 15-16-year-old students from 79 countries and economies including 10 in Latin America: Argentina, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Mexico, Panama, Peru and Uruguay. These data have been supplemented by results from the World Bank Skills Towards Employability and Productivity (STEP) survey of adults living in urban areas of Bolivia and Colombia, using a comparable literacy assessment to PIAAC, although the results are not from a representative sample of the whole adult population.

Key findings and recommendations

Adult skills

The Survey of Adult Skills found that adults (16-65-year-olds) in Latin America performed well below those in most other countries taking part, including the four other middle-income countries. In literacy and numeracy, the four participating LAC countries lie near or at the bottom of the rankings whatever measure is used. In the case of problem solving in technology-rich environments, substantial shares of their populations did not have the ICT skills needed to complete the assessment at all.

The region is benefiting from the recent expansion in access to education, however. More highly educated younger adults (16-24-year-olds who have gone on to tertiary education) score better than those who left school without completing upper secondary education by a larger margin than their peers in OECD countries. Skill levels in the participating Latin American countries tend to increase linearly with age, from 16-24-year-olds to 55-65-year-olds, reflecting the very recent expansion of upper secondary attainment in the region. Gender gaps in skills development are also closing – although women lag further behind men in numeracy than the OECD average, the gap is below the OECD average among 16-24-year-olds in Chile and Peru.

Career readiness among secondary students

Young adults in the region are struggling in the labour market; they are twice as likely to be unemployed than those aged 25 and over, a gap that has only widened since the turn of the century. This may be because their education is not equipping them with the right academic skills, but the problem may equally lie with non-academic aspects. Teenagers with clear and realistic expectations about their future careers, and the qualifications needed to attain them, have a better chance of making the right decisions about the type and level of attainment to aim for, and ultimately benefit in terms of pay and job satisfaction if their qualifications and occupation are well matched. However, many 15-year-olds in LAC countries are struggling to form clear career expectations, with those who do largely concentrating on a few, largely professional jobs. School career guidance is patchy across the region, with 15-year-olds less likely than those in the OECD to have had the chance to explore potential career options with employers, or gain valuable experience through part-time work, internships, or volunteering. Schools can help students form realistic plans for the future through engaging with employers to provide career guidance activities and building a culture of critical reflection. Girls and students from the most disadvantaged backgrounds would seem to have the most to gain from more effective career guidance based on international good practice.

Gender and family configuration

Although girls in Latin America outperform boys in reading in PISA, irrespective of their socio-economic status, this advantage does not translate into better labour-market outcomes. Although higher-skilled women at the top of the earnings distribution earn about the same as similarly skilled men in Latin America, women in the region generally enjoy lower returns to their literacy skills than their male peers. Family background – both socio-economic status and parental education – and expectations have an impact on skills development for girls and boys alike.

The choices made by young people at the start of their adult lives – whether to stay in education, and when to cohabit or start a family – can have a lifelong impact. Those with lower reading skills are more likely to move in with a partner and have children earlier, particularly among girls. In contrast, staying on in school longer is associated with delaying parenthood. Latin American countries have much higher teenage pregnancy rates than the OECD average, and this is especially the case for girls with lower reading skills. Women of all ages are also much more likely to be single parents than men, although the link with proficiency is less clear than in OECD countries. Supporting young women to stay in education and make sound choices in their transition to the labour market will help them achieve better outcomes for themselves and the next generation.

Economic outcomes

Low skill levels among adults in Latin America may be holding the region back economically. Countries in the region have fewer workers in high value-added sectors and skilled occupations. Adults with lower skills are less likely to work in the formal sector or in skilled jobs. Improving the skills of all workers will require greater investment in adult training, but currently the region lags behind the OECD in the provision of organised training activities. This is largely due to lower participation rates among informally employed workers and those in industries with low levels of research and development (R&D) intensity, both of which form a much larger share of the workforce than the OECD average.

1 Skills in Latin America: Results from PIAAC

Four Latin American countries took part in the first cycle of PIAAC: Chile, Ecuador, Mexico and Peru. As middle-income countries which are only just beginning to experience the expansion in education that OECD countries enjoyed many decades ago, their results are lower than most other countries and economies taking part. In literacy, numeracy and problem solving they lie at or near the bottom of the rankings, and some do not have the basic skills necessary to take the assessment at all, unsurprising in a region with low information and communications technology (ICT) penetration. More highly educated adults do better, although even tertiary-educated adults in Latin America demonstrate lower proficiency than their OECD counterparts. Skills in these countries tend to change linearly with age, reflecting the very recent increases in upper secondary attainment. Gender gaps in skills are also wider among older age groups, but closing among the under-25s.

Introduction

Literacy and numeracy skills form the foundation for developing higher-order cognitive skills such as analytic reasoning and are essential for accessing and understanding specific knowledge domains. In addition to these core cognitive skills, the capacity to manage information and solve problems in technology-rich environments is becoming a necessity as ICT permeates the workplace, the classroom and lecture hall, the home, and social interactions more generally. As such, literacy, numeracy and problem solving are relevant skills across a range of life contexts, from education and work, to home, socialising and interacting with public authorities. Adults who are highly proficient in these skills are likely to be able to make the most of the opportunities created by the technological and structural changes currently transforming modern societies. Those who struggle to use new technologies are at greater risk of losing out.

To help better measure these key competencies globally, the OECD launched the Survey of Adult Skills, a product of the Programme for the International Assessment of Adult Competencies (PIAAC), whose first results were released in 2013. The PIAAC Survey measures the proficiency of working-age adults (16-65-year-olds) in the three key information-processing skills mentioned above: literacy, numeracy and problem solving in technology-rich environments (PSTRE). It was designed to provide insights into how well adult populations can perform the key skills society needs and how they use them at work and at home.

In total, 39 countries and economies participated in the first cycle of the PIAAC Survey, mostly high-income countries. However, the survey also included middle-income countries: four Latin American countries – Chile, Ecuador, Mexico and Peru – along with Indonesia, Kazakhstan and the Republic of Türkiye. PIAAC uses the methodology and taxonomy adopted by the World Bank (2019^[1]) to classify countries by income levels.¹

This chapter uses data from the first cycle of the PIAAC Survey, conducted between 2011 and 2018 (OECD, 2016^[2]; 2019^[3]), to report and evaluate the performance of the four participating Latin American countries, particularly the skill development of adults. It highlights the average proficiency levels of these countries in all three skills measured by the survey and compares their performance with other participating countries. The chapter also analyses the proficiency of different sub-groups of the population taking part, based on educational attainment, age, gender and socio-economic background. These results are contextualised according to these countries' economic development and their levels of educational achievement.

Box 1.1. Survey of Adult Skills: Understanding the results

The results of the three assessed domains are reported using scales ranging from 0 to 500. Each of the three proficiency scales is divided into “proficiency levels”, defined by particular score-point ranges. Six proficiency levels are defined for literacy and numeracy (from below Level 1 to Level 5) and four for problem solving in technology-rich environments (from below Level 1 to Level 3).

The results for literacy and numeracy are presented in the form of mean proficiency scores for each country as well as the proportion of the population in each proficiency level. When it comes to assessing PSTRE, however, the share of the target population for which the results apply varies widely across countries/economies. This is due to the very different levels of familiarity with computer applications in the countries and economies participating in the Survey of Adult Skills. Proficiency scores relate only to the proportion of the target population in each participating country who were able to undertake the computer-based version of the assessment and thus meet the preconditions for displaying competency in this domain. In other words, the populations for whom proficiency scores for PSTRE are reported are

not the same across countries. For this reason, the presentation of these results focuses on the proportion of the population at each proficiency level rather than comparing mean proficiency scores.

The proficiency levels are designed so that the scores represent degrees of proficiency in a particular aspect of the domain. Each level is associated with a certain number of items, with higher levels being associated with items of increasing difficulty. In other words, at each level, individuals can successfully complete certain types of tasks. For example, respondents scoring at Level 1 in literacy are likely to be able to successfully complete tasks that require reading relatively short texts to locate a single piece of information, which is identical to or synonymous with the information given in the question or directive and in which there is little competing information. Respondents reaching Level 5 in literacy are more likely to be able to complete tasks that involve searching for and integrating information across multiple, dense texts, constructing syntheses of similar and contrasting ideas or points of view, or evaluating evidence and arguments. These respondents can apply and evaluate logical and conceptual models, and evaluate the reliability of evidentiary sources and select key information. They are also aware of subtle, rhetorical cues and can make high-level inferences or use specialised background knowledge.

The purpose of described proficiency scales is to facilitate the interpretation of the scores assigned to respondents. Respondents at a particular level have demonstrated knowledge and skills associated with that level and also those required at lower levels. Thus, respondents scoring at Level 2 are also likely to be proficient at Level 1, with all respondents expected to answer at least half of the items at that level correctly

Source: OECD (2019^[3]) *Skills Matter: Additional Results from the Survey of Adult Skills*, <https://doi.org/10.1787/1f029d8f-en>.

Skills proficiency across domains in Latin America

Proficiency in literacy

The Survey of Adult Skills defines literacy as the ability to understand, evaluate, use and engage with written texts in order to participate in society, achieve one's goals, and develop one's knowledge and potential. The term "literacy" in the Survey refers to reading written texts; it does not involve comprehending or producing spoken language or producing text (writing) (OECD, 2019^[3]). In addition, given the growing importance of digital devices and applications as a means of generating, accessing and storing written text, reading digital texts² is an integral part of literacy as measured in the Survey of Adult Skills.

On average, across all OECD countries participating in the Survey of Adult Skills, one in ten adults (10.0%) scored at Level 4 or higher and one in three (34.6%) scored at Level 3. Overall, almost half of all adults (44.6%) scored at the three highest levels (Level 3, 4 or 5). Below these levels, around one in three adults (34.3%) performed at Level 2 and around one in five adults at either Level 1 (15.0%) or below Level 1 (4.8%) (Figure 1.1).

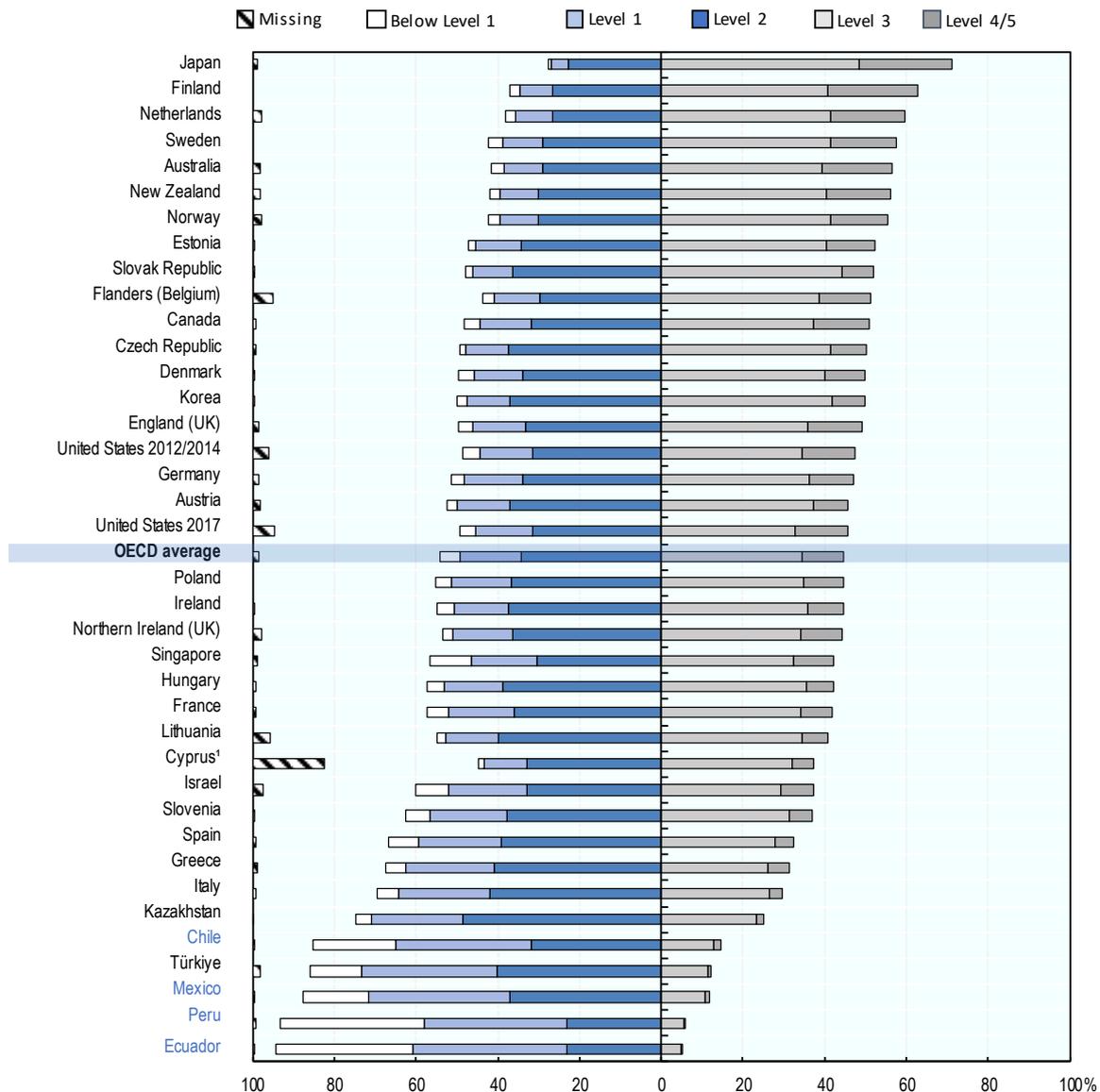
In contrast, the results for Latin American participants show that less than one in eight adults performed at Level 3 or higher in Ecuador (5.2%), Mexico (11.7%) and Peru (6.1%). At 14.5%, Chile had a slightly higher percentage of adults who performed at the highest levels of proficiency in literacy (Figure 1.1). These countries were also among the countries and economies with the largest proportions of adults who scored at Level 1 or below. More than half of their populations scored at the lowest levels of proficiency in literacy: 71.2% in Ecuador, 70.2% in Peru, 53.4% in Chile and 50.6% in Mexico.

The average literacy score across the OECD countries and economies that participated in the assessment was 266 points, towards the top of Level 2 on the literacy scale. Among the Latin American countries

however, the average proficiency of adults in Mexico was 222 points, in Chile it was 220 points, and in Peru and Ecuador 196 points, all substantially below the OECD average.

Figure 1.1. Literacy proficiency among adults

Percentage of 16-65-year-olds scoring at each proficiency level in literacy



Notes: Adults in the missing category were not able to provide enough background information to impute proficiency scores because of language difficulties, or learning or mental disabilities (referred to as literacy-related non-response).

1. Note by the Republic of Türkiye:

The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Türkiye recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Türkiye shall preserve its position concerning the “Cyprus issue”.

Note by all the European Union Member States of the OECD and the European Union:

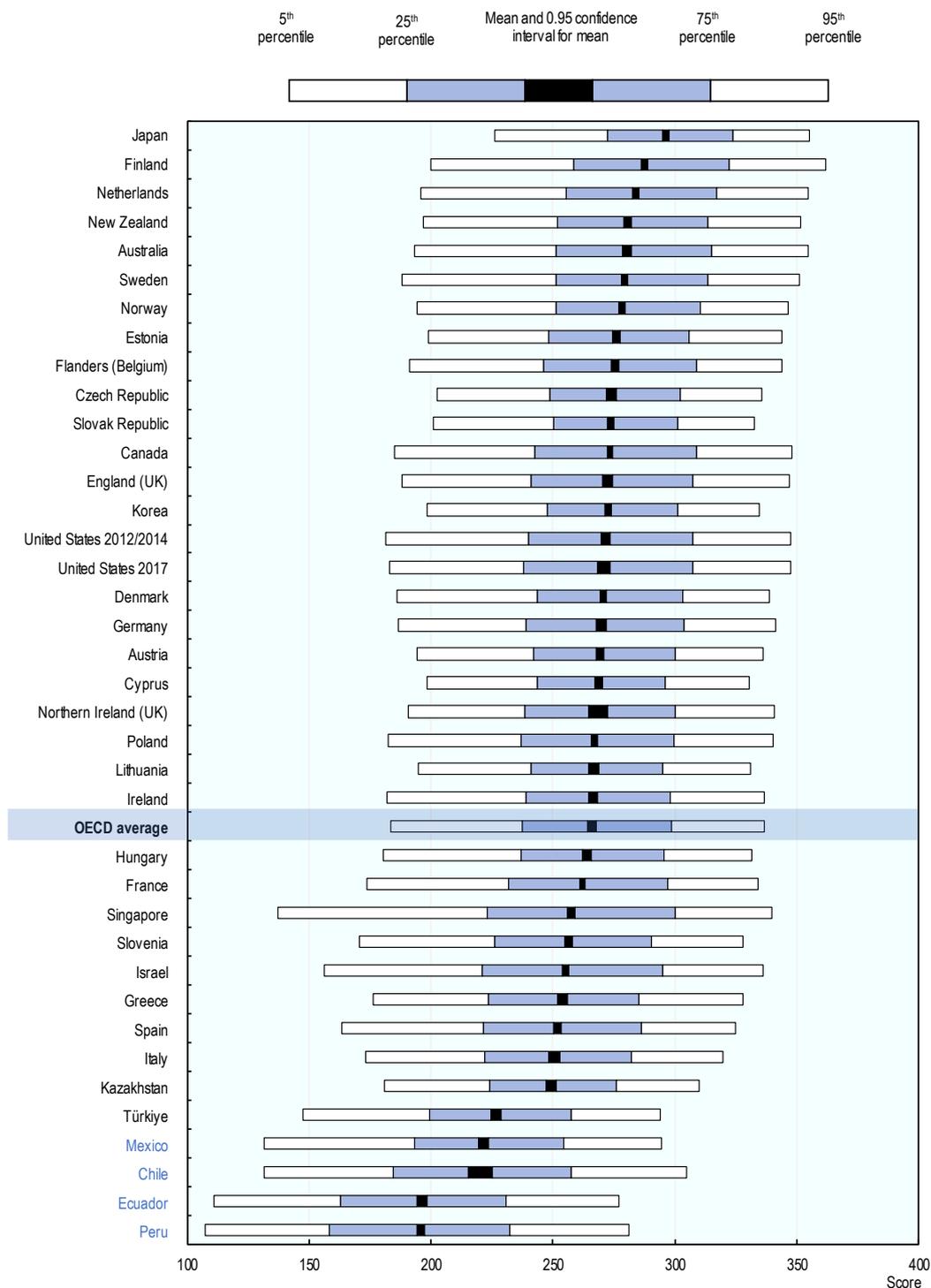
The Republic of Cyprus is recognised by all Members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Countries and economies are ranked in descending order of the combined percentages of adults scoring at Level 3 and at Level 4/5.

Source: OECD (2019^[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 2.6, <https://doi.org/10.1787/888934019951>.

Figure 1.2. Distribution of literacy proficiency scores among 16-65-year-olds

Mean literacy proficiency and distribution of literacy scores, by percentile



Notes: Mean scores are shown with a 0.95 confidence interval. Literacy-related non-response (missing) is excluded from the calculation of mean scores.

Countries and economies are ranked in descending order of the mean score.

Source: OECD (2019_[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 2.8, <https://doi.org/10.1787/888934019989>.

In addition to examining differences in average literacy proficiency, it is also useful to explore differences in the distribution of scores within each country or economy. This can be done by identifying the score below which 5%, 25%, 75% and 95% of adults perform. Comparing score-point differences among adults at different points in the distribution of proficiency measures the extent of variation in that distribution in each participating country or economy. Figure 1.2 presents the distribution of scores within countries and economies in addition to the mean score. A longer bar indicates greater variations in literacy proficiency within a country; a shorter bar indicates smaller variations.

On average, among OECD countries, 61 score points separate the 25% of adults who attained the highest and lowest scores in literacy (a measure known as the interquartile range). Of the Latin American countries that participated in PIAAC Cycle 1, Peru and Chile have the widest such range of literacy scores, with the top- and bottom-performing 25% separated by 74 score points in Peru and 73 score points in Chile. Among the other two participating Latin American countries, the gap is 68 points in Ecuador, somewhat wider than the OECD average, but in Mexico it is 61 points, the same as the OECD average.

Proficiency in numeracy

The Survey of Adult Skills defines numeracy as the ability to access, use, interpret and communicate mathematical information and ideas in order to engage in and manage the mathematical demands of a range of situations in adult life (OECD, 2019^[3]). A numerate adult responds appropriately to mathematical content, information and ideas represented in various ways in order to manage situations and solve problems in a real-life context. While performance on numeracy tasks is partly dependent on the ability to read and understand texts, numeracy involves more than applying arithmetical skills to information embedded in texts.

On average, two in five adults (42.2%) across participating OECD countries/economies scored at Level 3 and above in numeracy. In the Latin American context, much smaller shares of the adult population performed at this level: 11.9% in Chile, 3.6% in Ecuador, 8.9% in Mexico and 5.6% in Peru (Figure 1.3).

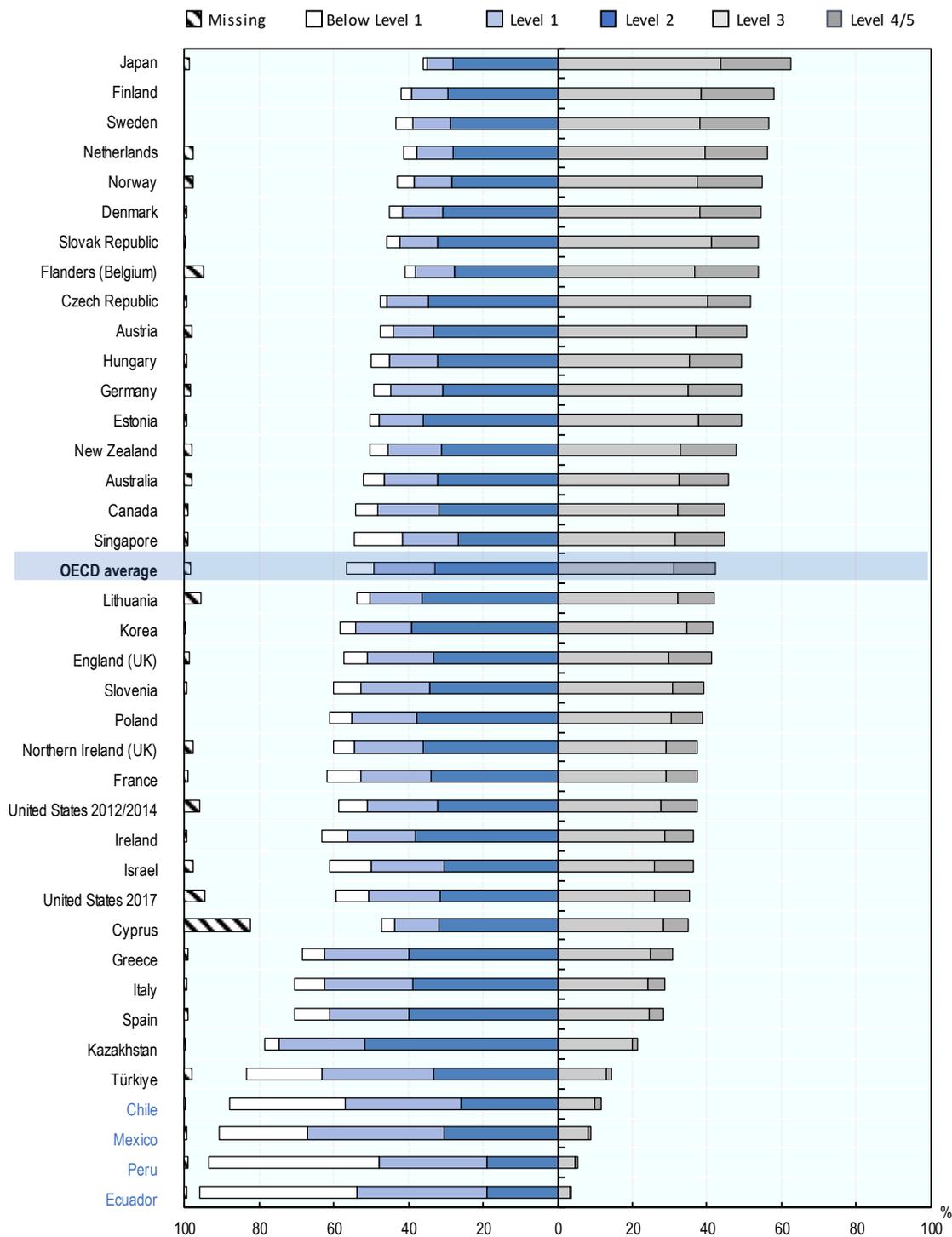
At the other end of the scale, on average across all OECD countries participating in the Survey of Adult Skills, around one in three adults scored at Level 2 (33.0%) and around one in four adults (23.5%) scored at the two lowest levels of numeracy proficiency: 16.4% at Level 1 and 7.1% below Level 1. In contrast, around three-quarters of the adult population in Ecuador (76.8%) and Peru (74.8%) were only proficient at Level 1 or below in numeracy. In Chile this was true for 61.9% of adults and in Mexico for 60.1%.

The average numeracy score across the OECD countries and economies that participated in the assessment is 262 points. But the Latin American countries that participated in the first cycle of PIAAC recorded the lowest average scores of all countries/economies: 179 points (Peru), 185 points (Ecuador), 206 points (Chile) and 210 points (Mexico).

Figure 1.4 shows the variation in numeracy proficiency observed within countries, giving the distribution of scores in addition to the mean score. On average across OECD countries, the gap between the highest and lowest 25% of performers in numeracy is 68 score points. Among the Latin American countries that participated in first cycle of the PIAAC survey, Peru, Chile and Ecuador have larger gaps in scores between these groups than the OECD average (91 points for Peru, 82 points for Chile and 74 points for Ecuador), while in Mexico, the gap is similar to the OECD average, at 67 points. Peru has the widest distribution of numeracy proficiency among all the countries and economies that participated in the first cycle of PIAAC.

Figure 1.3. Numeracy proficiency among adults

Percentage of 16-65-year-olds scoring at each proficiency level in numeracy



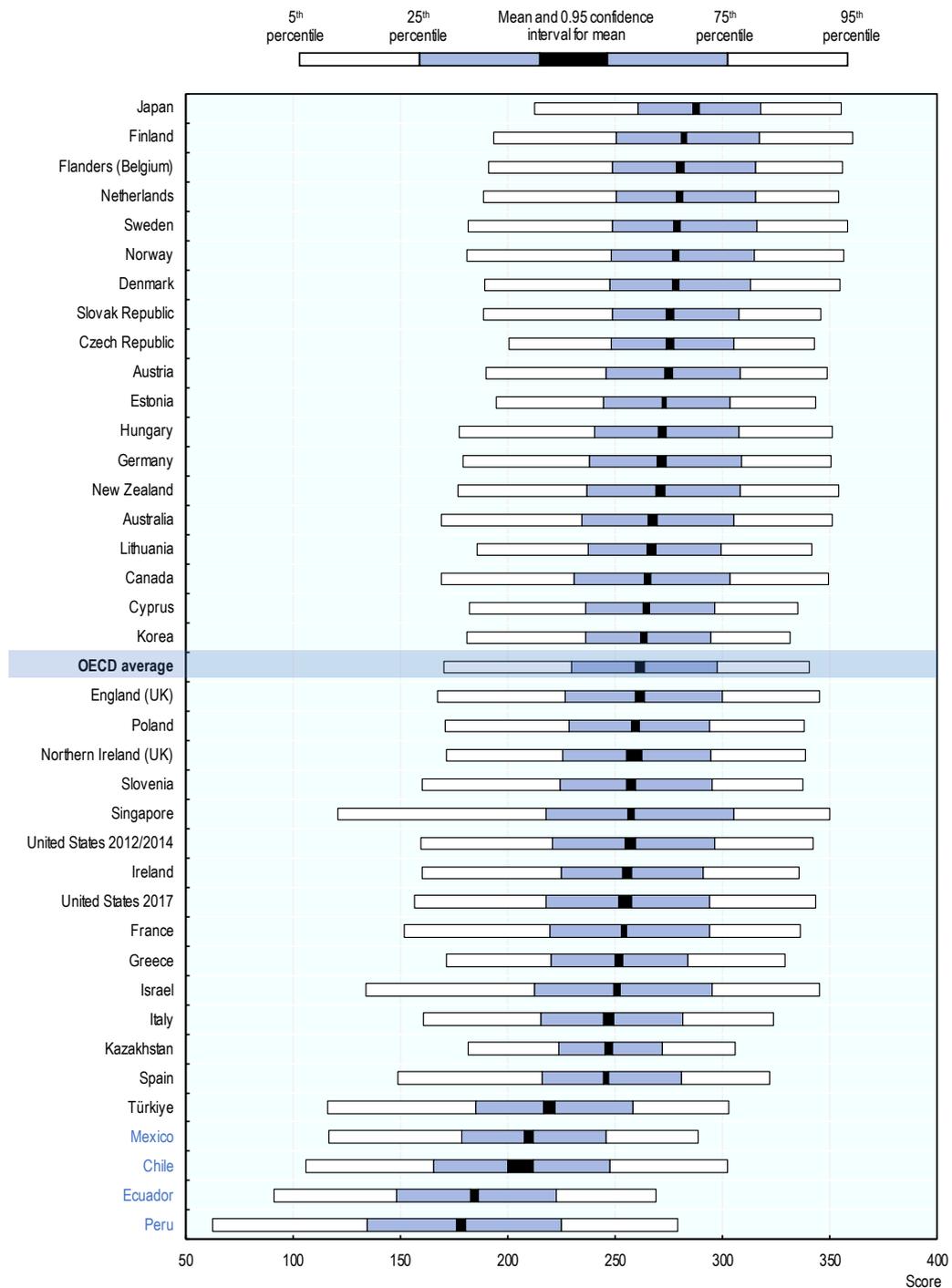
Notes: Adults in the missing category were not able to provide enough background information to impute proficiency scores because of language difficulties or learning or mental disabilities (referred to as literacy-related non-response).

Countries and economies are ranked in descending order of the combined percentages of adults scoring at Level 3 and at Level 4/5.

Source: OECD (2019_[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 2.9, <https://doi.org/10.1787/888934020008>.

Figure 1.4. Distribution of numeracy proficiency scores among 16-65-year-olds

Mean numeracy proficiency and distribution of numeracy scores, by percentile



Notes: Mean scores are shown with a 0.95 confidence interval. Literacy-related non-response (missing) is excluded from the calculation of mean scores.

Countries and economies are ranked in descending order of the mean score.

Source: OECD (2019_[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 2.11, <https://doi.org/10.1787/888934020046>.

The reading components assessment

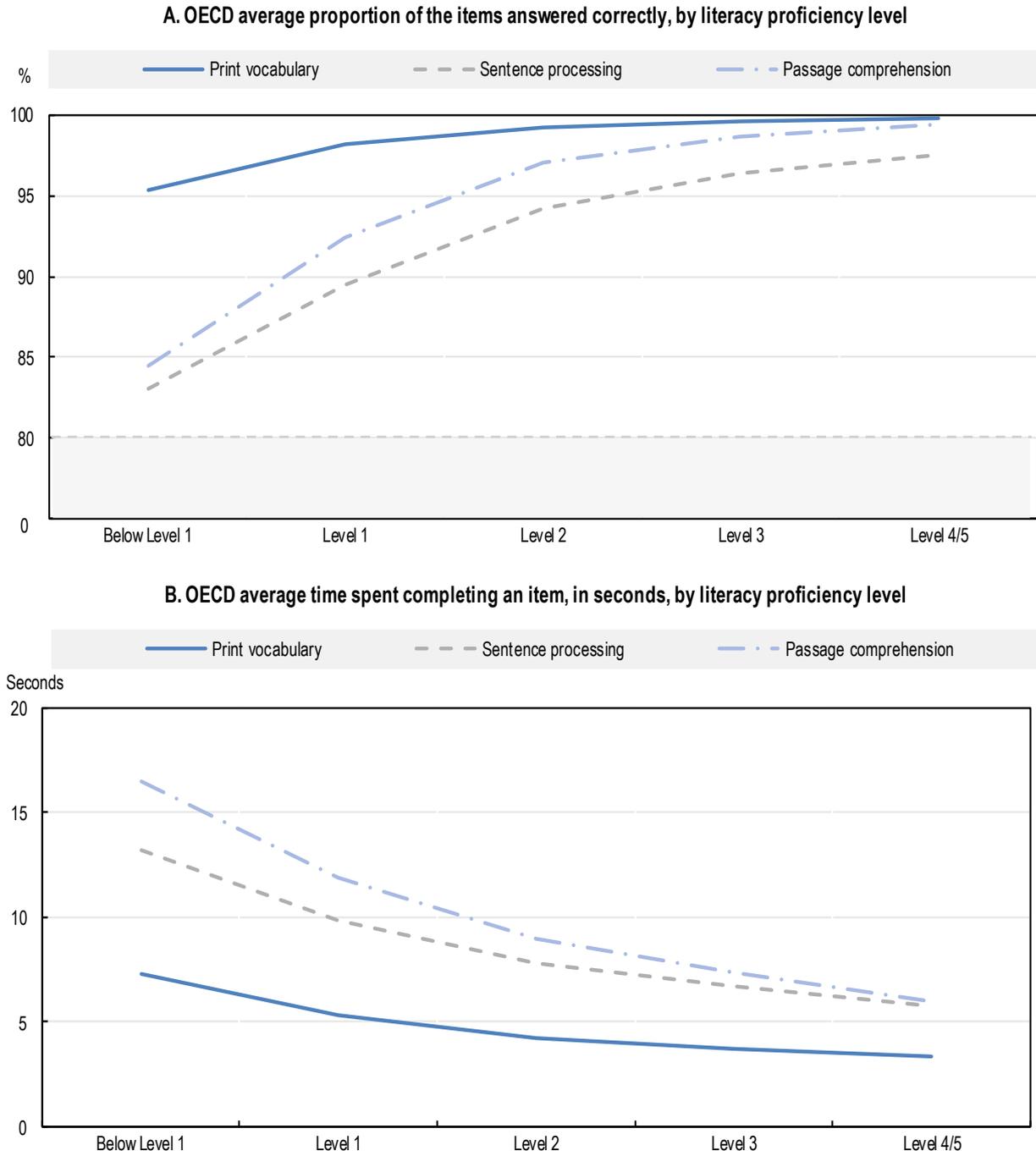
In almost all countries and economies that participated in the Survey of Adult Skills, a sizable proportion of adults have low proficiency in either literacy or numeracy. In most countries, between 15% and 38% of 16-65-year-olds are proficient at Level 1 or below in either literacy or numeracy. As described above, at Level 1, individuals can usually complete simple reading and numeracy tasks, such as locating information in a short text or performing simple one-step arithmetic operations. They have trouble extracting information from longer and more complex texts or performing numerical tasks involving several steps and mathematical information represented in different ways. Individuals who perform below Level 1 are not only unable to locate information in complex texts, but they experience difficulty doing so even with simple texts. Similarly, they struggle to complete simple numerical tasks. The Latin American countries stand out as having substantial shares of adults who are only proficient at Level 1 or below in either literacy or numeracy: 64.7% in Mexico, 67.1% in Chile, 80.1% in Peru and 82.2% in Ecuador.

The Survey of Adult Skills includes an assessment of reading components to provide more information about the skills of adults with poor reading proficiency. The reading components assessment was designed to assess three skills considered to be essential preconditions for understanding the meaning of written texts: knowledge of print vocabulary (word recognition), the ability to evaluate the logic of sentences (sentence processing) and fluency in reading passages of text (passage comprehension). Skilled readers undertake these types of operations automatically. The assessment of reading components was taken by respondents who failed the literacy and numeracy core assessment in the computer-based version of the assessment, and by all respondents taking the paper version of the assessment.

Figure 1.5 presents information about two dimensions of performance in the reading components assessment: the proportion of items that were correctly answered by respondents and the time taken to complete the assessment. The first panel shows the relationship between literacy proficiency and the percentage of items answered correctly (accuracy); the second panel shows the relationship between literacy proficiency and the time taken (in seconds) to complete an item (speed or fluency). These graphs show that accuracy and speed increase with proficiency for all three reading components, with gains tapering off markedly at Level 2 or higher.

The results suggest that while many adults in most countries participating in the Survey of Adult Skills have poor reading skills, very few are illiterate in the sense of being unable to read at all. This is as true of Latin American countries, where most adults are proficient at Level 1 and below on the literacy scale, as it is of countries with far smaller proportions of adults at this level. In Chile, Ecuador, Mexico and Peru, which have very high proportions of adults performing at Level 1 or below for literacy, only 8-20% of adults failed the literacy and numeracy core tests designed to identify the respondents who could undertake the entire assessment. Those failing the core test in these countries also correctly answered more than 82% of the items in the sentence-processing elements of the reading components assessment, 83% of the passage-comprehension items and 95% of the print-vocabulary items.

Figure 1.5. Literacy proficiency and performance in core reading components



Note: Finland, France and Japan did not participate in the reading components assessment.

Source: OECD (2019^[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 2.13, <https://doi.org/10.1787/888934020084>.

Proficiency in problem solving in technology-rich environments

The Survey of Adult Skills defines problem solving in technology-rich environments (PSTRE) as “using digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks” (PIAAC Expert Group in Problem Solving in Technology-Rich Environments, 2009^[4]). It focuses on “the abilities to solve problems for personal, work and civic purposes by setting up appropriate goals and plans, and accessing and making use of information through computers and computer networks” (OECD, 2012^[5]).

Problem solving in technology-rich environments does not measure the cognitive skills required to solve problems in isolation. It measures both problem-solving and basic computer literacy skills (i.e. the capacity to use ICT tools and applications). This is done by assessing how well adults can use ICT tools and applications to assess, process, evaluate and analyse information in a goal-oriented way.

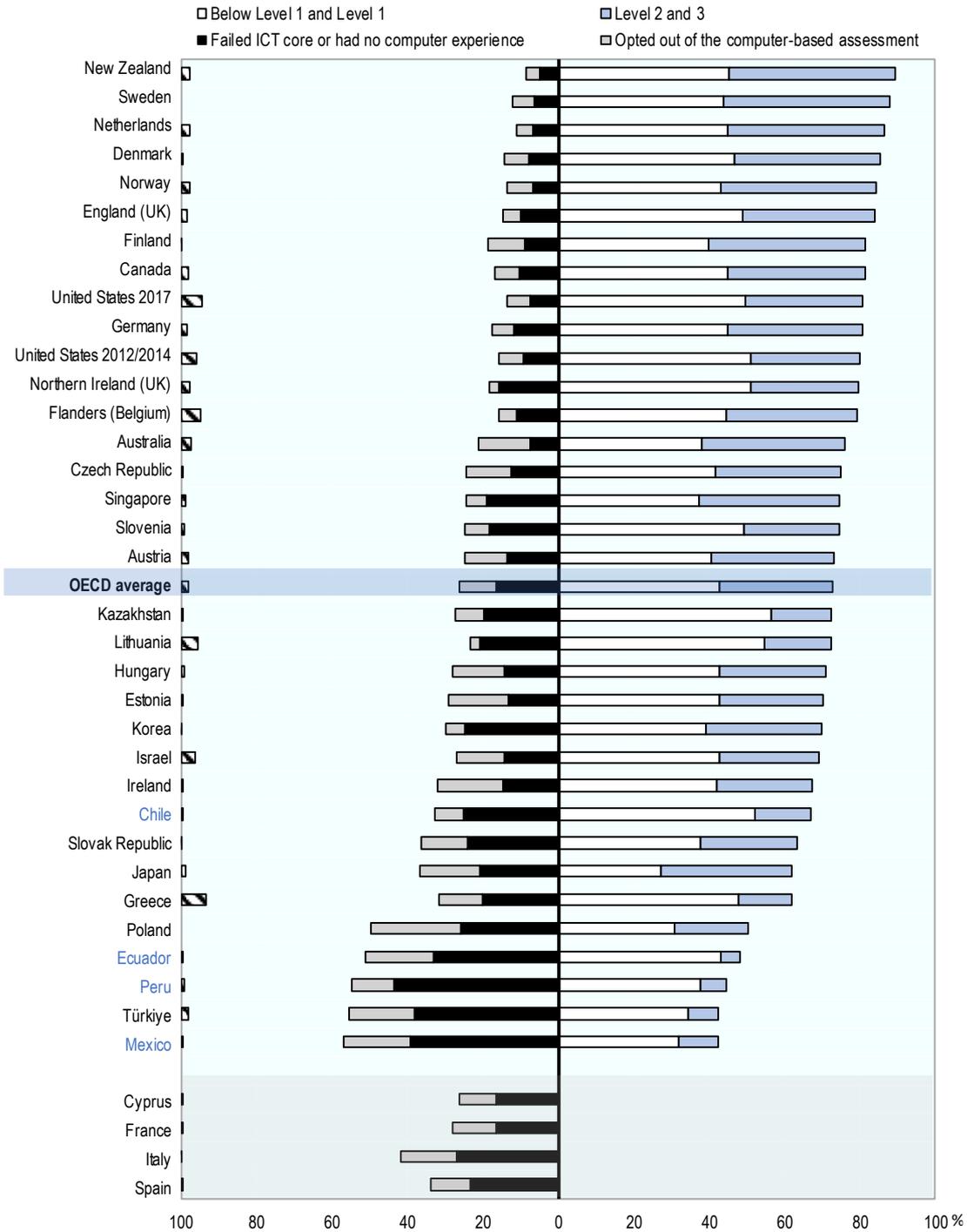
The share of the population for which estimates of proficiency in this domain refer to vary widely, so reporting on PSTRE focuses on defining the population proportions at each proficiency level, rather than on comparing mean proficiency scores (see Box 1.1). The Survey provides two different, albeit related, pieces of information about the capacity of adults to manage information in technology-rich environments. The first is the proportion of adults who are familiar enough with computers to use them to perform information-processing tasks. The second is the proficiency levels among those adults who have that familiarity in solving the sort of problems they are likely to encounter in their roles as workers, citizens and consumers in a technology-rich world.

On average, across the OECD countries participating in the Survey of Adult Skills, around one-third of adults (29.7%) are proficient in PSTRE at the two highest levels for this domain (Level 2 or 3). Among the Latin American countries taking part, Chile had a slightly higher proportion of adults who performed at the highest proficiency levels in problem solving than the other three, at 14.6%. In contrast, only one in ten adults achieved these levels in Mexico (10.2%) and less in Ecuador (5.2%) and Peru (6.6%) (Figure 1.6).

At the other end of the spectrum, 43% of adults scored at Level 1 and below on this measure across all participating OECD countries and economies. Among the Latin American countries, Ecuador had a similar proportion of adults scoring at Level 1 and below (43.1%), while in Chile this proportion was higher by almost 10 percentage points (52.4%). In Mexico (32.1%) and Peru (37.8%) however, fewer adults scored at Level 1 and below than the OECD average. These anomalies could be explained by the large shares of adults in these Latin American countries who either failed the ICT core test or had no computer experience (see section below). In other words, smaller shares of adults might be scoring at Level 1 and below in countries like Peru and Mexico because these countries have large proportions of adults who were unable to display enough proficiency in problem solving to have scored at even the lowest levels (Figure 1.6).

Figure 1.6. Proficiency in problem solving in technology-rich environments among adults

Percentage of 16-65-year-olds scoring at each proficiency level



Notes: Adults included in the missing category were not able to provide enough background information to impute proficiency scores because of language difficulties, or learning or mental disabilities (referred to as literacy-related non-response). The missing category also includes adults who could not complete the assessment of problem solving in technology-rich environments because of technical problems with the computer used for the survey. Cyprus, France, Italy and Spain did not participate in the problem solving in technology-rich environments assessment. Countries and economies are ranked in descending order of the combined percentages of adults scoring at Level 2 and 3.

Source: OECD (2019_[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 2.15, <https://doi.org/10.1787/888934020122>.

Basic information and communications technology skills

All participating countries and economies had a substantial proportion of adults who were unable to display proficiency in problem solving in technology-rich environments because they took the assessment in the paper-based format. Three separate groups of adults fall into this category: 1) those with no computer experience; 2) those who failed the ICT core test and thus did not have the basic computer skills needed for the computer-based assessment; and 3) those who opted to take the paper-based version of the assessment even though they reported having ICT experience.

Overall across countries participating in PIAAC, around one in ten adults (11.7%) reported having no computer experience and a further 4.7% of adults did not have the basic ICT skills needed, as assessed by the ICT core test, such as the capacity to use a mouse or scroll through a web page. Latin American countries like Ecuador (32.9%), Mexico (39.2%) and Peru (43.6%) stand out for the considerable proportions of their adult populations who have no prior computer experience or very poor ICT skills.

These results should be understood in context, however. The share of adults without basic ICT skills or computer experience reflects these countries' level of economic development and ICT penetration. Only about two-fifths of the households in Ecuador (43.9%) and Mexico (44.2%) had access to a computer device at home, while this share was significantly lower in Peru (33.6%) (ITU, 2021^[6]). Internet access in these countries also is quite limited: only around half of households in 2021 had access to functional Internet at home in Ecuador (53.2%) and Peru (48.7%), and the share in Mexico was only slightly higher at 60.6% (ITU, 2021^[6]). This is in stark contrast to many high-income OECD countries where more than two-thirds of households have access to a computer, the Internet and a telephone line.

Some adults also preferred not to use a computer in the assessment, despite reporting some prior computer experience. On average, one in ten adults (10.0%) opted to take the paper-based version of the assessment without first taking the ICT core test (Figure 1.6). Among the Latin American countries, a significant proportions of adults in Ecuador (18.1%) and Mexico (17.8%) opted out of the computer-based assessment. While these proportions were similar to those observed in other countries with a similar performance in the Survey such as Türkiye (17.7%), they were also comparable to proportions in relatively better-performing countries like Poland (23.8%) and Ireland (17.4%). In contrast, Peru had a similar share of adults opting out of the computer-based assessment to the overall average (11.1%) while Chile had a far smaller share (7.5%).

Socio-demographic distribution of key information-processing skills

This section analyses the levels of proficiency of different sub-groups of the population taking part in the Survey of Adult Skills (PIAAC), defined in terms of educational attainment, age, gender and socio-economic background. This information is relevant to help policy makers design better and more informed policies. For instance, they could better target policies toward adults with low information-processing skills to reduce disparities and improve human capital. The results could also be used to better understand the strengths and weaknesses of current and past policies targeting adults in different age groups or levels of educational attainment, and to reflect on the outcomes of policies that were in place when those adults were attending education.

First, we look at differences in skill levels of adults based on their educational attainment. This analysis is split into two parts: assessing the proficiencies of adults aged 25-64 years, and a similar analysis for those aged 16-24 years. We split up this analysis because younger adults, might still be in education or have not yet made important educational choices. As a result, they are hardly comparable to older adults in terms of their highest completed level of education, and deserve a separate analysis.

We then also look at the skill proficiencies of adults based on their age, their gender and their socio-economic status.

Skills proficiency and educational attainment among 25-65 year-olds

Standardised large-scale assessments like PIAAC are popular and relevant because they provide comparable cross-country measures of the skills of respondents. One of the key contributions of PIAAC has been the expansion of the concept of human capital by going beyond educational attainment to include real measures of skills. This is its main advantage over more traditional (and easier to collect) indicators such as the number of years of schooling completed. Indeed, the PIAAC survey shows large differences in literacy and numeracy proficiency among adults with the same level of education, especially among people who have completed their schooling in different countries. This is not to downplay the importance of information about educational attainment. As formal schooling is the main (although not the only) vehicle for educating and building the skills of a country's population, joint analyses of these two sources of information provide essential insights for policy makers who wish to assess the state of their educational systems.

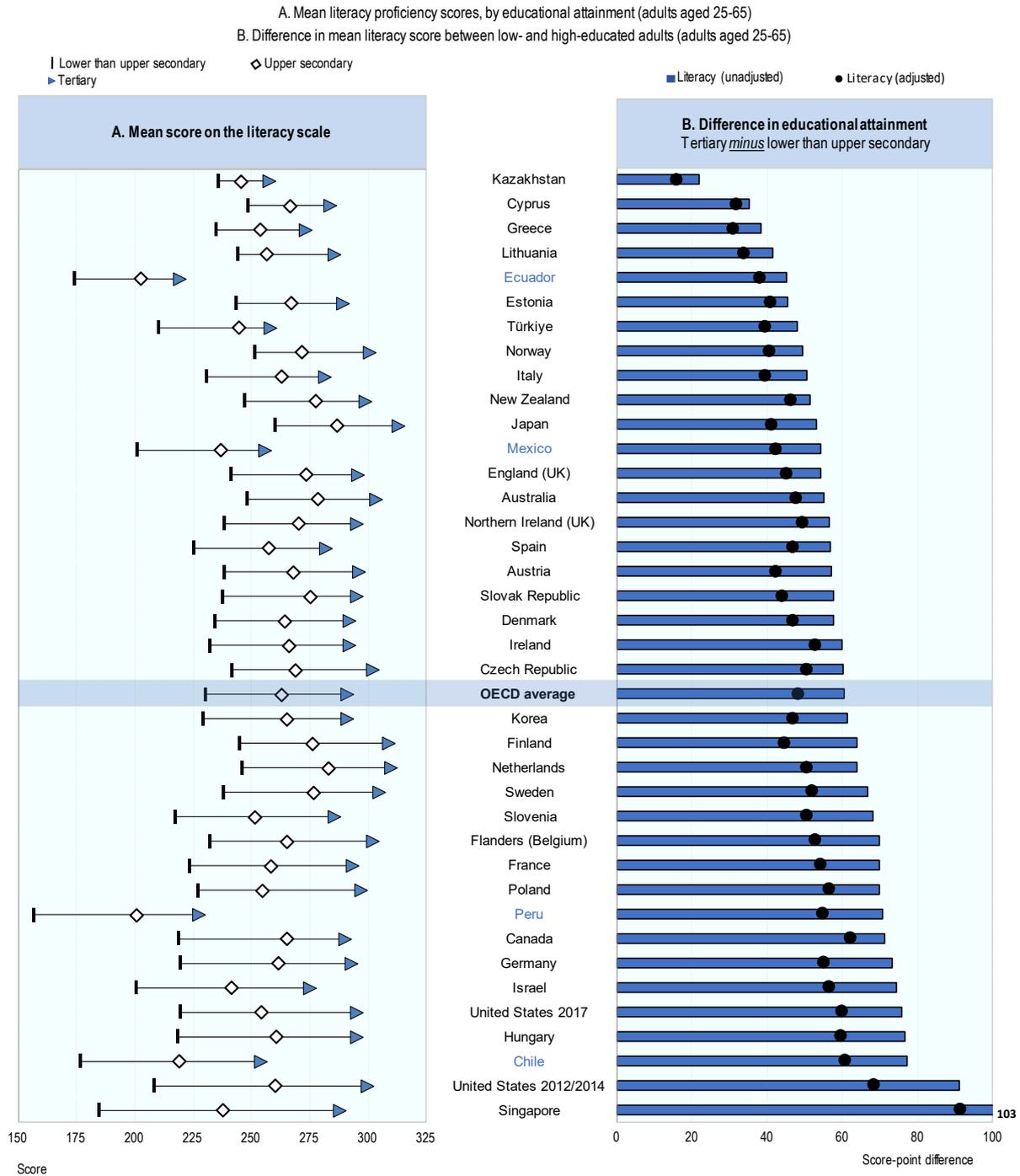
Cross-country comparisons should also always be interpreted with some care. As educational systems vary widely across countries and over time, the correct interpretation of the relationship between education and skills often requires supplementary information about the history of educational policies in different countries. This issue is even more complicated because different countries and economies participated in PIAAC in different years.

Across all countries and economies, more highly educated adults perform better in the PIAAC assessment (Figure 1.7). Among the OECD countries and economies that participated in PIAAC, the average difference in literacy scores between tertiary-educated adults and adults with below upper secondary education is 61 score points. Looking at the Latin American countries participating in PIAAC Cycle 1, the average score difference between tertiary-educated adults and adults with below upper secondary education in Ecuador and Mexico remains substantial but is smaller than the OECD average (45 points for Ecuador and 52 points for Mexico). In contrast, the difference is larger than the OECD average for Peru, at 71 points, and Chile, at 77 points. This large difference in Peru and Chile can be attributed specifically to the low performance of adults without an upper secondary qualification (discussed below).

Besides the differences in performance between adults at different levels of academic achievement, performance figures for each of these groups are also telling. In Ecuador, Mexico and Peru, performance in literacy and numeracy is consistently below the corresponding OECD average for all levels of educational attainment. Proficiency is especially low among adults without an upper secondary qualification in Peru, who scored 157 in literacy on average and 127 in numeracy. These are well below the levels registered in Chile (177 score points in literacy and 154 score points in numeracy), Ecuador (174 and 160 score points) and Mexico (201 and 189 score points). Reflecting their low average score, 67% of adults in Peru without an upper secondary qualification scored below Level 1 in literacy and 78% in numeracy, by far the largest share among all countries participating in PIAAC, while Ecuador came second with 50% below Level 1 in literacy and 61% in numeracy.

On the other hand, tertiary-educated adults in Peru have greater literacy and numeracy proficiency than tertiary-educated adults in Ecuador, although in both countries they still performed significantly worse than their peers in Chile and Mexico. Among adults with upper secondary education or below, those in Mexico have the highest proficiency in literacy and numeracy among Latin American countries taking part in PIAAC, while the scores for tertiary-educated adults in Mexico are in line with those of tertiary-educated adults in Chile.

Figure 1.7. Differences in literacy proficiency, by educational attainment



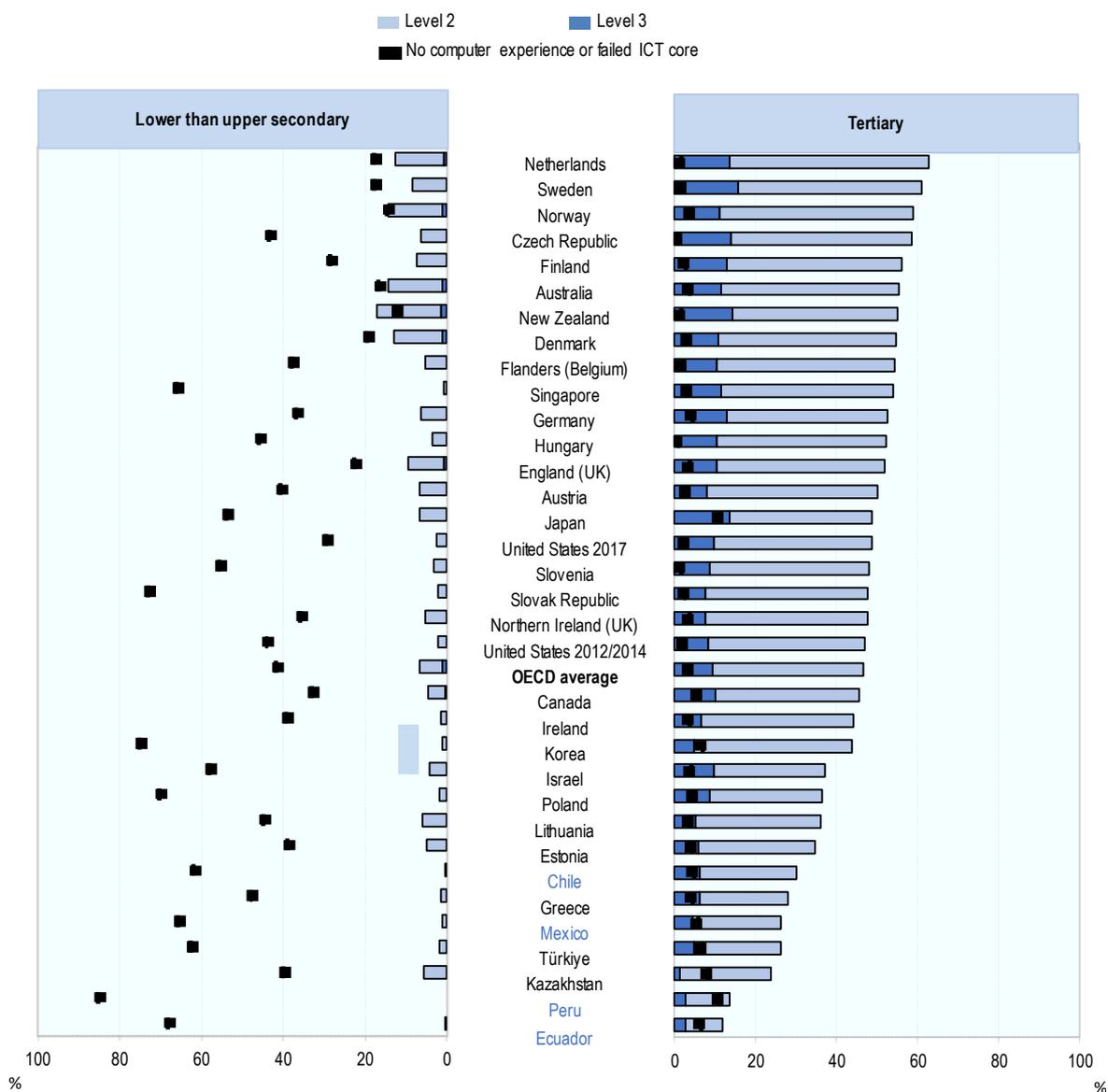
Notes: All differences in Panel B are statistically significant. Unadjusted differences are the differences between the two means for each contrast category. Adjusted differences are based on a regression model and take account of differences associated with other factors: age, gender, immigrant and language background and parents' educational attainment. Only the score-point differences between two contrast categories are shown in Panel B, which is useful for showing the relative significance of educational attainment with regard to observed score-point differences. Lower than upper secondary includes ISCED-97 1, 2 and 3C short. Upper secondary includes ISCED-97 3A, 3B, 3C long and 4. Tertiary includes ISCED-97 5A, 5B and 6. Where possible, foreign qualifications are included as the closest corresponding level in the respective national education systems.

Countries and economies are ranked in ascending order of the unadjusted differences in literacy scores (tertiary minus lower than upper secondary).

Source: OECD (2019_[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 3.2, <https://doi.org/10.1787/888934020179>.

Figure 1.8. Differences in problem-solving proficiency, by educational attainment

Percentage of low- and high-educated adults scoring at Level 2 or 3 in problem solving in technology-rich environments or having no computer experience (25-65-year-olds)



Notes: For the purpose of computing the percentages presented in the graph, adults participating in PIAAC have been classified in one of the following mutually exclusive categories: opted out of the computer-based assessment; no computer experience; failed the ICT core test; below Level 1, at Level 1, at Level 2, at Level 3 (of the problem solving in technology-rich environments scale). For more detailed results for each category see the source below. Lower than upper secondary includes ISCED-97 1, 2 and 3C short. Upper secondary includes ISCED-97 3A, 3B, 3C long and 4. Tertiary includes ISCED-97 5A, 5B and 6. Where possible, foreign qualifications are included as the closest corresponding level in the respective national education systems. Cyprus, France, Italy and Spain did not participate in the problem solving in technology-rich environments assessment.

Countries and economies are ranked in descending order of the combined percentages of adults with tertiary attainment scoring at Levels 2 or 3.

Source: OECD (2019^[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 3.3, <https://doi.org/10.1787/888934020198>.

Differences in proficiency related to educational attainment are even larger in problem solving in technology-rich environments (Figure 1.8). In most countries and economies, a large share of low-educated adults (those without upper secondary education) lacked even the fundamental ICT skills needed for the problem-solving assessment. As a result, 41% of low-educated respondents across OECD countries did not receive a score in this domain. The share was even larger in the Latin American countries, at around 60% in Chile, approaching 70% in Ecuador and Mexico, and surpassing 85% in Peru.

The low-educated adults who undertook the problem-solving assessment performed rather poorly. As a result, the overall share of low-educated adults scoring at Level 2 or 3 is very small, averaging 7% across OECD countries. This share is negligible among the Latin American countries – around 1% for Mexico and even lower for the other three countries. In contrast, close to 48% of tertiary-educated adults across OECD countries scored at Level 2 or 3 in the problem-solving assessment on average. This share was much lower in the Latin American countries: 12% in Ecuador, 14% in Peru, 26% in Mexico and 30% in Chile.

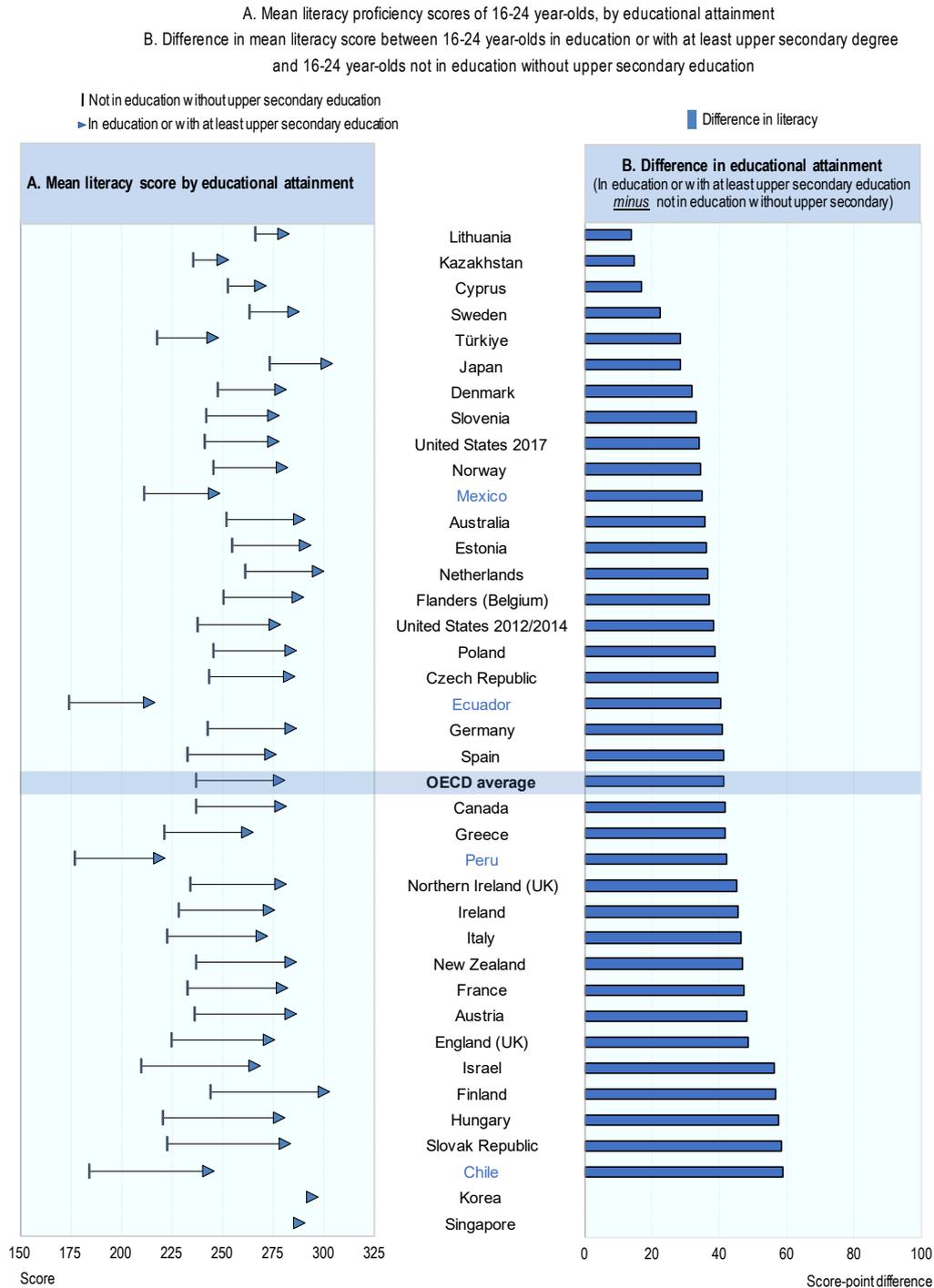
Skills proficiency and educational attainment among 16-24-year-olds

The analyses here classify young adults into three groups, defined as the key transition points in the “typical” pathways throughout the education system. The first group comprises so-called “early school leavers”, i.e. young adults who have left formal education without achieving an upper secondary qualification. The second comprises those who completed upper secondary education but decided not to enrol in tertiary education. The third group comprises young adults enrolled in tertiary education or who have already completed a tertiary qualification. In the case of this latter group, the analysis is restricted to respondents aged 20 to 24 years, because country differences in the typical age at which students graduate from upper secondary school would generate large (and artificial) differences across countries in the share of 16-19-year-olds who are enrolled in tertiary education.

Figure 1.9 shows significant gaps in literacy proficiency between early school leavers and other young adults, averaging 41 score points across OECD countries. This proficiency gap is close to the OECD average in all the Latin American participants, with one exception: at 59 points, Chile has the highest score gap between early school leavers and other young adults of all PIAAC participating countries and economies. This large gap is a combination of two factors: a below-average performance of early school leavers (184 points, against an OECD average of 236) and the performance of young adults still in education or who have attained an upper secondary qualification, which is higher than in other Latin American countries, at 243 score points.

The literacy proficiency of young early school leavers in Ecuador and Peru is the lowest among all participating countries and economies, at 173 and 176 score points, respectively, slightly below Chile. Early school leavers in Mexico also performed below the OECD average, at 211 score points. In practice, the relevance of this gap depends on the share of young people who leave school early. Mexico stands out in this respect: 36% of its 16-24-year-olds can be classified as early school leavers. Leaving school early is less widespread in Ecuador (19% of 16-24-year-olds), and Peru (13%), although still above the OECD average of 11%. In Chile this proportion is even smaller: only 9% of the 16-24 year-olds are early school leavers.

Figure 1.9. Differences in literacy proficiency among 16-24-year-olds, by educational attainment



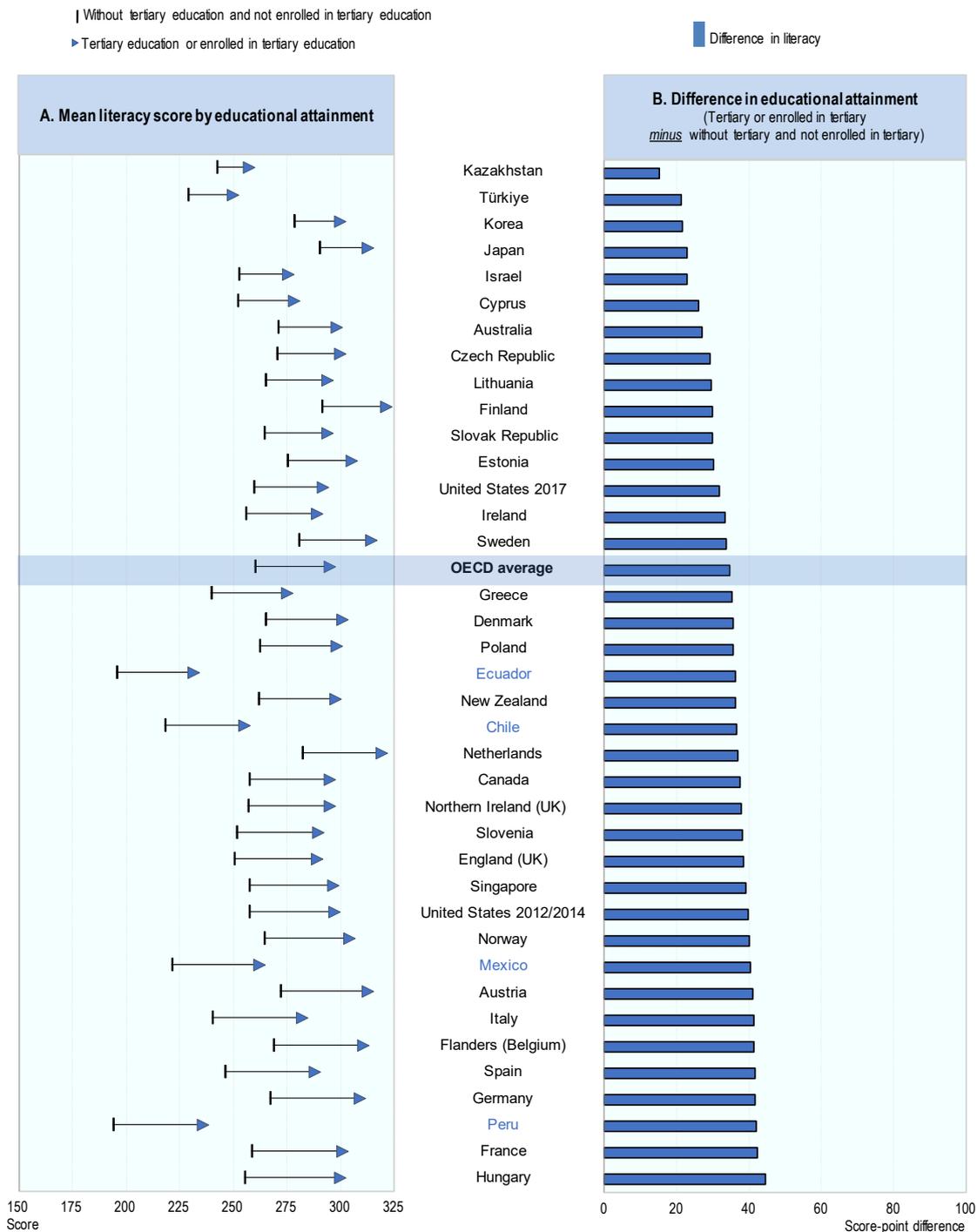
Notes: All differences in Panel B are statistically significant. Estimates based on a sample size of less than 30 are not shown in Panels A and B (Korea and Singapore). Lower than upper secondary includes ISCED-97 1, 2 and 3C short. Upper secondary includes ISCED-97 3A, 3B, 3C long and 4. Tertiary includes ISCED-97 5A, 5B and 6. Where possible, foreign qualifications are included as the closest corresponding level in the respective national education systems.

Countries and economies are ranked in ascending order of the differences in literacy scores (in education or with at least upper secondary education minus not in education without upper secondary).

Source: OECD (2019^[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 3.4, <https://doi.org/10.1787/888934020217>.

Figure 1.10. Differences in literacy proficiency among 20-24-year-olds, by educational attainment

A. Mean literacy proficiency scores of 20-24 year-olds, by educational attainment
 B. Difference in mean literacy score between 20-24 year-olds in education or with at least upper secondary degree and 20-24 year-olds not in education without upper secondary education



Notes: All differences in Panel B are statistically significant. Tertiary includes ISCED-97 5A, 5B and 6. Where possible, foreign qualifications are included as the closest corresponding level in the respective national education systems.

Countries and economies are ranked in ascending order of the differences in literacy scores (Tertiary or enrolled in tertiary minus without tertiary and not enrolled in tertiary).

Source: OECD (2019^[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 3.5, <https://doi.org/10.1787/888934020236>.

Among 20-24-year-olds, those currently enrolled in tertiary education or with a tertiary qualification have higher proficiency levels than their peers who completed upper secondary education but are not enrolled in tertiary education (Figure 1.10). The average gap in literacy proficiency between these two groups is 35 score points across OECD countries. The gap is wider among all Latin American participants. However, in Ecuador and Chile, the gap is only just larger (36 score points in Ecuador and 37 score points in Chile), while the difference is far larger in Mexico (41 score points) and Peru (42 score points).

It is also important to note that in Ecuador and Peru, the proficiency of these young adults, whether enrolled in tertiary education or not, is the lowest among all participating countries and economies. The scores for young adults enrolled in tertiary education averaged 236 in Peru, and 232 in Ecuador, compared to the OECD average of 295 score points. The order is reversed for young adults not enrolled at the tertiary level: 194 score points in Peru and 195 in Ecuador, compared to the OECD average of 260 score points. Young adults in Mexico and Chile perform better than their counterparts in Ecuador and Peru, but only marginally. The scores for young adults enrolled in tertiary education averaged 255 in Chile and 262 in Mexico. Similarly, scores for young adults not enrolled in tertiary education averaged 218 score points in Chile and 221 in Mexico (Figure 1.10).

Skills proficiency and age

One of the primary objectives of the Survey of Adult Skills is to shed light on the mechanisms that drive the evolution of skills over people's lifetimes. This task is not easy, as proficiency is influenced by factors that are not easily distinguishable. These factors can be classified into three broad categories: 1) investments in skills, in the form of formal education or adult training; 2) biological processes that drive cognitive functioning; and 3) life experiences, such as employment status or personal interests, that lead to the practice of skills at work or in daily life. Importantly, these factors are likely to be interdependent: education can affect labour-market opportunities. The use of skills at work and even biological ageing process might have different consequences depending on life circumstances and the intensity of skills use.

In cross-sectional data like those collected in the Survey of Adult Skills, observed differences in proficiency by age are inevitably the combined result of age effects (i.e. the consequences of growing older), cohort effects (i.e. the consequences of being born in a particular year, and therefore being exposed to experiences such as a specific type of education), and period effects (i.e. shocks that take place at a given point in time and affect all cohorts in the same way). Controlling for observable differences across individuals born in different years (notably for differences in the level of education) can help to identify age effects, assuming that the quality of education does not change over time.

In most countries and economies, the relationship between age and proficiency is an inverted U-shaped curve, with a peak between the mid-twenties and the early thirties. In contrast, proficiency declines linearly with age in Ecuador, Mexico and Peru, the Latin American countries that reported these data in PIAAC Cycle 1. This is probably because upper secondary attainment rates in these countries have only recently increased. On average across OECD countries, only 15% of 25-34-year-olds have not completed their upper secondary education, compared to 50% in Mexico, 36% in Ecuador and 26% in Peru. When looking at adults under 25, the share of respondents who have completed upper secondary education is close to the OECD average of 59% in Ecuador (57%) and higher in Peru (76%). It is not very distant in Mexico (43%). This is a good example of how the relationship between age and proficiency in cross-sectional data is influenced by cohort effects, such as different cohorts experiencing the impact of different education policies.

Figure 1.11 presents the average literacy score of adults in different age bands and the average difference between 55-65-year-olds and 25-34-year-olds. In most countries, these two groups have the lowest and highest average scores in literacy, respectively. Literacy proficiency among older adults is lowest in Peru (175 score points) and Ecuador (181 score points). In these countries, about half the adult population aged 55-65 scored below Level 1, and about one-third at Level 1. Proficiency among older adults in Chile and

Mexico is slightly higher: averaging 194 score points in Chile and 197 in Mexico, although around one-third still scored below Level 1 and about one-third at Level 1.

Just as with the older age group, Ecuador and Peru also recorded the lowest average proficiencies for those aged 25-34: 202 score points in Ecuador and 203 score points in Peru. Two-thirds of these adults in those countries scored at or below Level 1 in literacy. In comparison, average proficiency among younger adults is significantly higher in Mexico (230 score points) and Chile (235 score points), and the share of adults scoring at or below Level 1 in literacy in these countries is lower than in Peru and Ecuador. A little more than one-third of the population performed at or below Level 1 in Mexico and Chile.

Thus, as Figure 1.11 shows, Ecuador and Peru performed at the lower end of the spectrum for both younger and older adults, while Chile and Mexico reported much better results. There is also quite a lot of variation in the differences between the older and younger age groups across Latin American countries. In Peru, the difference in performance between older and younger age groups is 28 score points, similar to the OECD average of 29 score points. However, the performance gap is lower in Ecuador, at 21 score points, and higher in Mexico, where it is 33 score points, and much higher in Chile, where the gap is 41 points.

In most countries and economies, about half of the gap can be accounted for by differences in observable characteristics, notably in educational attainment, as younger cohorts are normally more educated than older cohorts. This effect is more substantial in Ecuador and Peru, where the differences are as small as 8 and 7 points, respectively, once adjusted for educational attainment. Both countries have recently experienced a significant expansion of basic education. While 58% of older adults in Peru and 68% in Ecuador have not completed upper secondary education, these shares drop to 26% in Peru and 36% in Ecuador among 25-34-year-olds. This is a much more pronounced difference between the two groups than the average of 20 percentage points across OECD countries, where educational expansion occurred earlier.

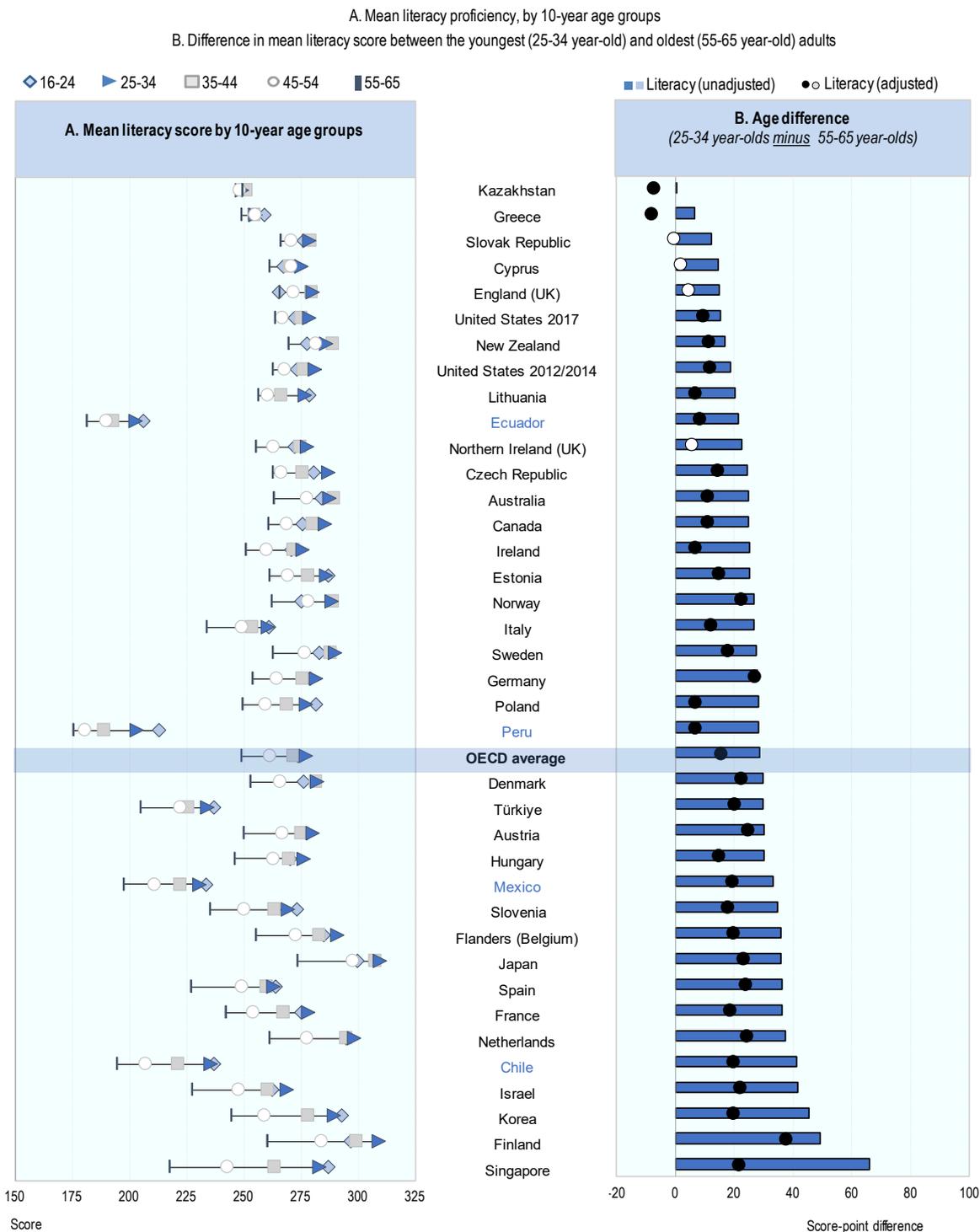
As the assessment of problem solving in technology-rich environment (PSTRE) required test takers to have some basic familiarity with digital devices and applications, it might be expected that age differences would be more pronounced in this domain. Indeed, Figure 1.12 shows particularly low proficiency levels in this area among older adults. In Chile, Ecuador, Mexico and Peru, the vast majority of older adults (55-65-year-olds) did not undertake the problem-solving assessment because they lacked the necessary ICT experience or failed the basic test of ICT skills. As a result, negligible proportions of older adults demonstrated problem-solving proficiency at Level 2 and none at Level 3 in these four countries.

When looking at younger adults, it is more interesting to look at their actual level of proficiency rather than the difference between them and older adults. Digital technologies might not yet be as widespread in middle-income countries as they are in more developed ones. Still, the fast adoption of digital technologies will be essential if these countries are to reap the benefits of globalisation, technological change and economic integration (OECD, 2019^[7]).

From this perspective, it is concerning to see low ICT proficiency levels even among younger adults in these countries. Mexico and Peru have the highest shares of 25-34-year-olds failing the core ICT test or having no ICT experience (28% in Mexico and 33% in Peru). Ecuador does slightly better, at 22%, but is still well behind Chile (13%). The proportion of 25-34-year-olds failing the core ICT test or having no ICT experience in the Latin American countries is much higher than the OECD average of 8%. The share of this age group scoring at Level 2 or 3 is only 7% in Ecuador, 9% in Peru and 13% in Mexico. The percentage of 25-34-year-olds scoring at Level 2 or 3 in Chile is substantially higher at 24%, but still below the OECD average of 43%.

However, when looking at the youngest adults (16-24-year-olds), there are some signs of potential improvement over time (i.e. comparing the older to younger cohorts) in the lowest performing countries. While the share of 16-24-year-olds scoring at Level 2 or 3 remains very low (25% in Chile, 18% in Mexico, and less than 12% in Ecuador and Peru), these young adults were less likely than 25-34-year-olds to opt out of the computer-based assessment, fail the ICT core test or to lack ICT experience.

Figure 1.11. Differences in literacy proficiency, by age



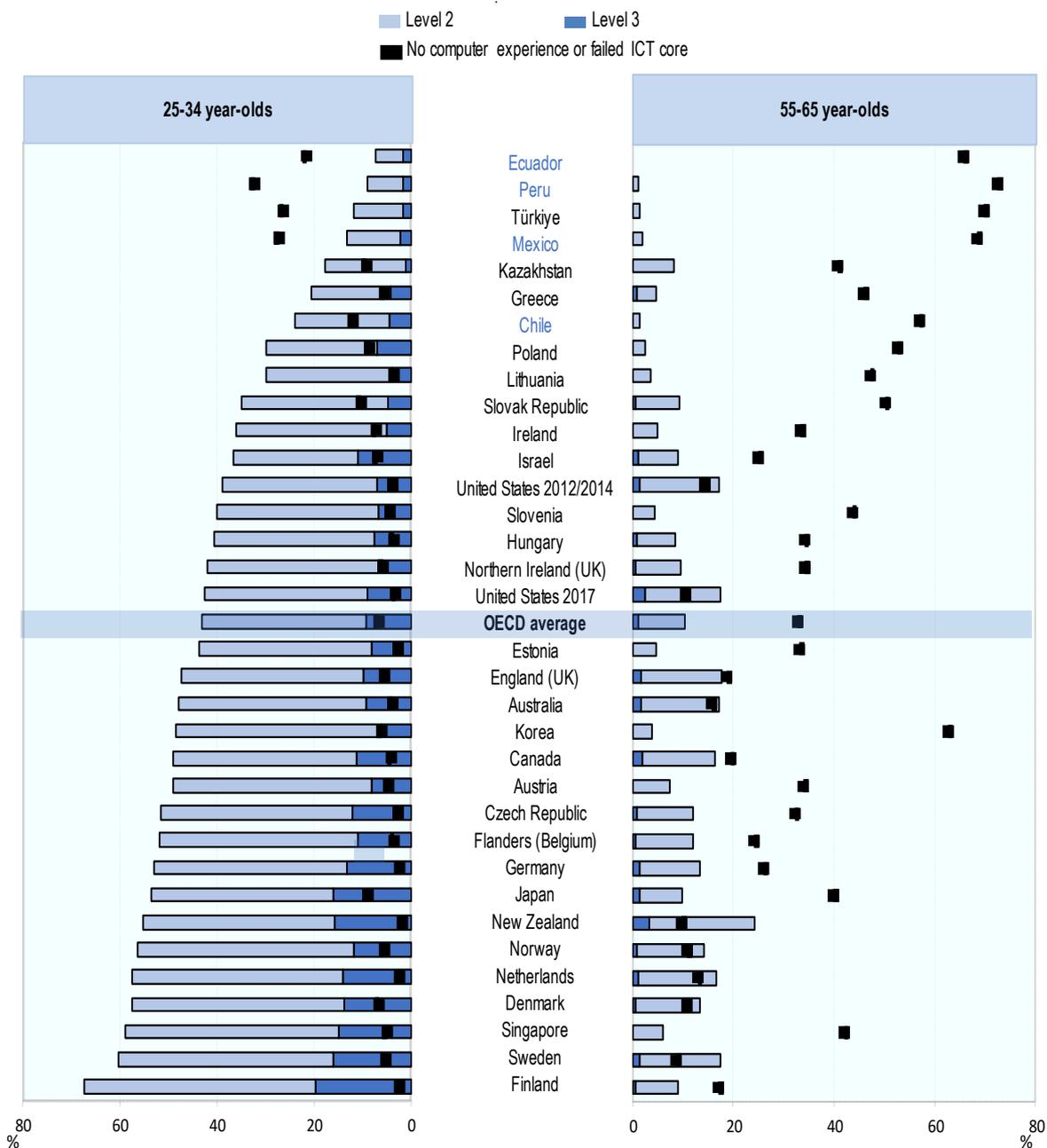
Notes: Statistically significant differences in Panel B are marked in a darker tone. Unadjusted differences are the differences between the two means for each contrast category. Adjusted differences are based on a regression model and take account of differences associated with other factors: gender, education, immigrant and language background and parents' educational attainment. Only the score-point differences between two contrast categories are shown in Panel B, which is useful for showing the relative significance of age with regard to observed score-point differences.

Countries and economies are ranked in ascending order of the difference in literacy scores (25-34 year-olds minus 55-65 year-olds).

Source: OECD (2019_[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 3.7, <https://doi.org/10.1787/888934020274>.

Figure 1.12. Differences in problem-solving proficiency, by age

Percentage of adults aged 25-34 and 55-65 scoring at Level 2 or 3 in problem solving in technology-rich environments or having no computer experience



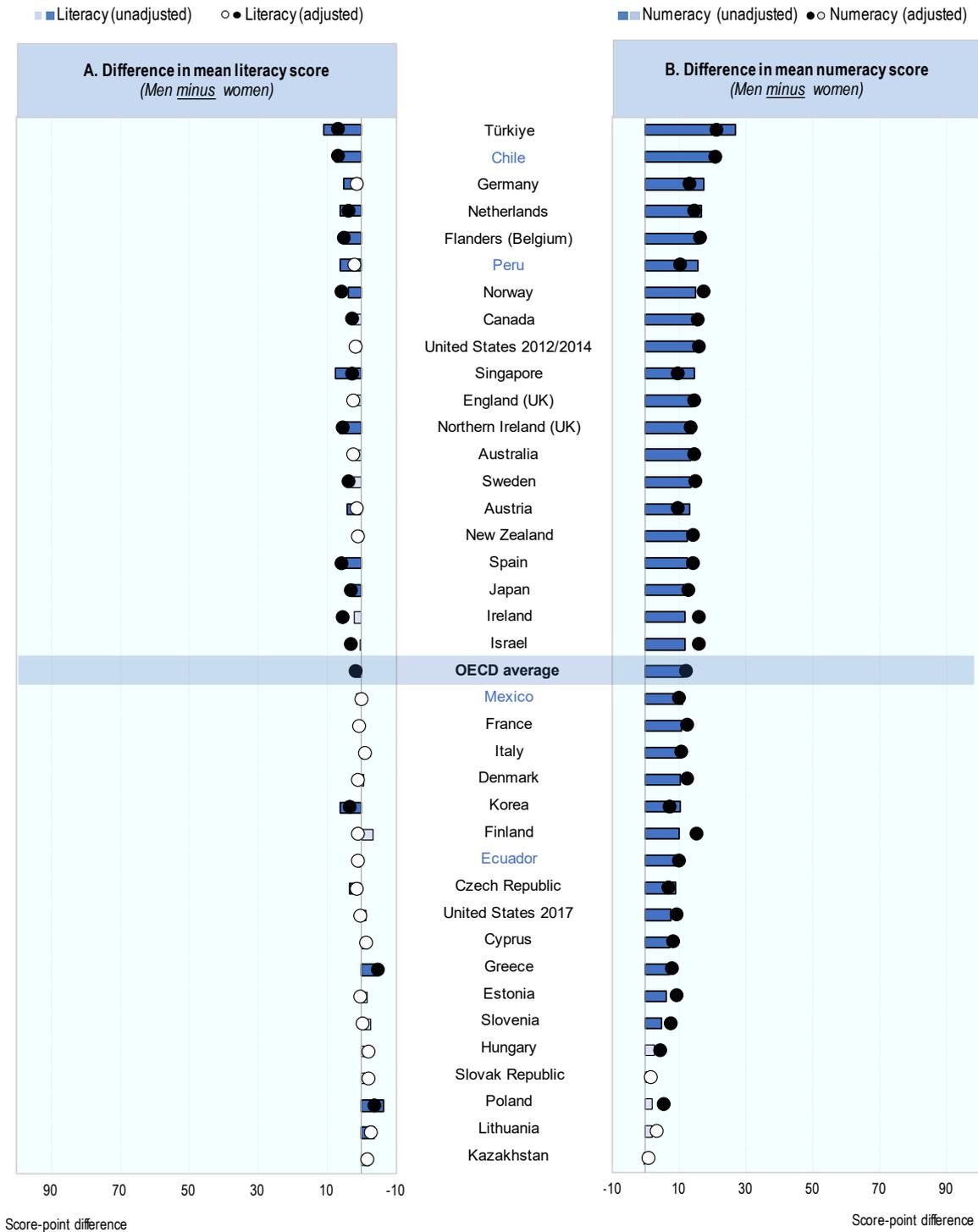
Notes: Percentages on the problem solving in technology-rich environments scale are computed so that the sum of percentages for the following mutually exhaustive categories equals 100%: opted out of the computer-based assessment; no computer experience; failed ICT core test; below Level 1, Level 1, Level 2 and Level 3. For more detailed results for each category, see corresponding table mentioned in the source below. Cyprus, France, Italy and Spain did not participate in the problem solving in technology-rich environments assessment.

Countries and economies are ranked in descending order of the combined percentages of adults aged 25-34 scoring at Level 2 or 3.

Source: OECD (2019^[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 3.8, <https://doi.org/10.1787/888934020293>.

Figure 1.13. Differences in literacy and numeracy proficiency, by gender

Differences in mean scores between men and women



Note: Statistically significant differences are marked in a darker tone. Unadjusted differences are the differences between the two means for each contrast category. Adjusted differences are based on a regression model and take account of differences associated with other factors: gender, education, immigrant background, language and parents' educational attainment.

Countries and economies are ranked in ascending order of the difference in numeracy scores (men minus women).

Source: OECD (2019^[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 3.9, <https://doi.org/10.1787/888934020312>.

Skills proficiency and gender

Gender differences in literacy and numeracy skills vary by country and by domain. They tend to be smaller in literacy than numeracy, and Latin American countries are no exception (Figure 1.13). The gender gap in numeracy is above the OECD average of 11 score points in Peru (16 score points) and Chile (21 score points).

Gender differences are typically more pronounced among older adults for two reasons. The first is that women's educational attainment has progressively caught up with that of men. The second is that women and men still tend to make different occupational choices or have different labour-market outcomes for a given level of education, which might affect the extent to which they have the opportunity to practise and maintain their level of proficiency. This is particularly evident in Peru and Chile, where the gender gaps in numeracy for adults aged 25 and over are as high as 19 score points in Peru and 24 in Chile (among the highest across all PIAAC participants), but fall to 5 and 8 score points respectively among adults aged 24 and under, below the OECD average. This is probably because it is only among these younger adults that women have roughly similar levels of educational attainment to men. In all age groups over 25, women are over-represented among adults without an upper secondary education and under-represented among upper secondary educated adults. A similar pattern (although on a smaller scale) is also evident for gender gaps in literacy.

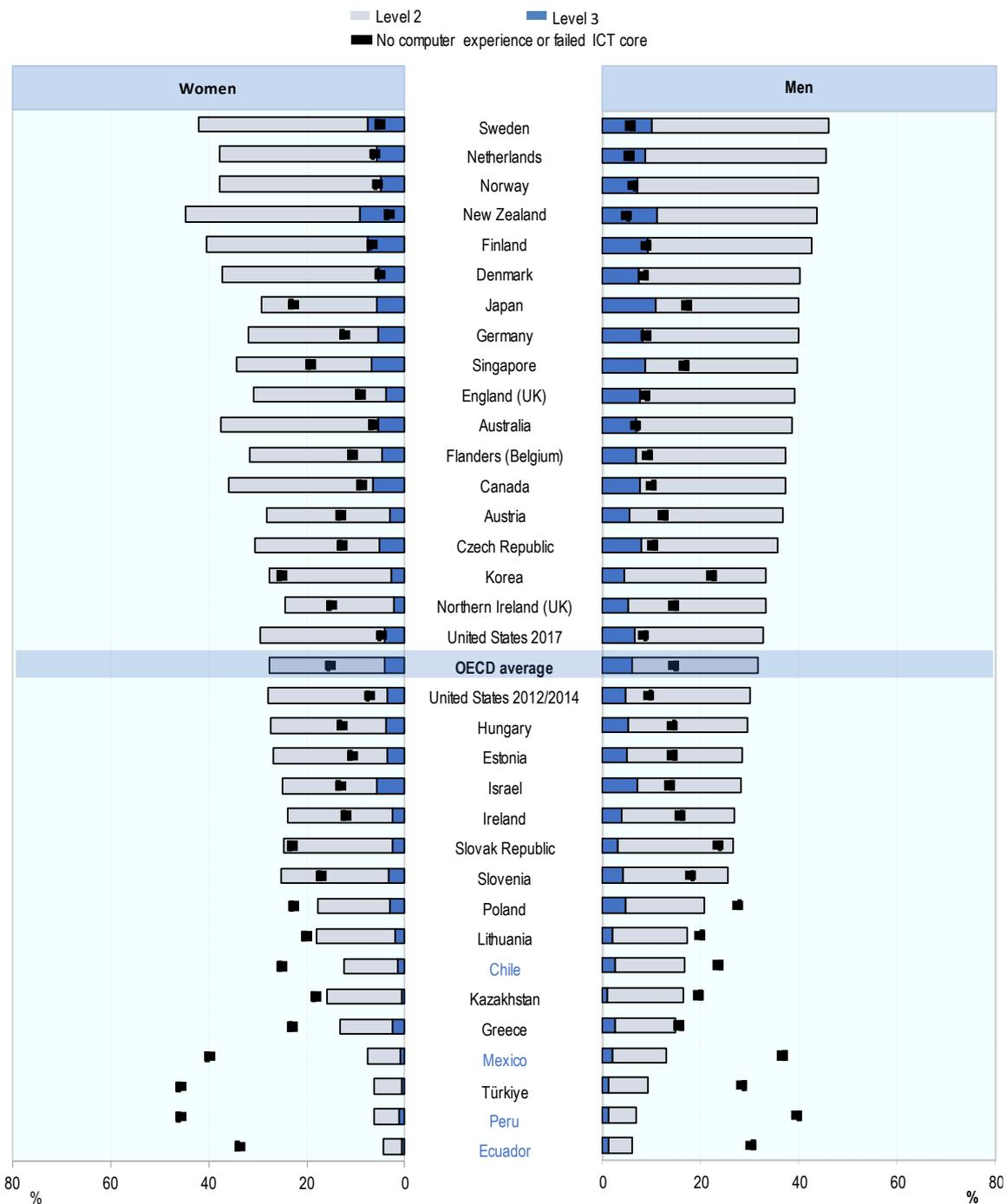
Among adults aged 45 and over, gender gaps in numeracy are wider than the OECD average in Chile, Ecuador and Peru, but are much smaller for adults below that age. A similar pattern is observed in Mexico, although the gender gap among older adults is in line with the OECD average.

Gender differences are not particularly pronounced in problem-solving skills, where men have only a slight advantage (Figure 1.14). On average, across OECD countries, 32% of men score at Level 2 or 3, compared to 28% of women, while a similar share of men and women have no computer experience or failed the ICT core test. Gender gaps in Ecuador and Peru are less pronounced at the top of the distribution: the percentage of men scoring at the two highest levels is 6% in Ecuador and 7% in Peru, while the corresponding shares for women are 4% in Ecuador and 6% in Peru. The gaps are slightly more significant for the other two Latin American countries: 13% of men in Mexico score at the two highest levels, compared to 8% of women, while in Chile the shares are 17% of men and 12% of women.

At the bottom end of the distribution, a larger share of women had no computer experience or failed the ICT core test in Ecuador and Peru: 35% in Ecuador, compared to 31% of men, and 47% in Peru, compared to 41% of men. In contrast, Chile and Mexico have smaller differences between men and women who reported having no prior computer experience or who failed the ICT core test: 26% of women and 24% of men in Chile, and 41% of women and 38% of men in Mexico.

Figure 1.14. Differences in problem-solving proficiency, by gender

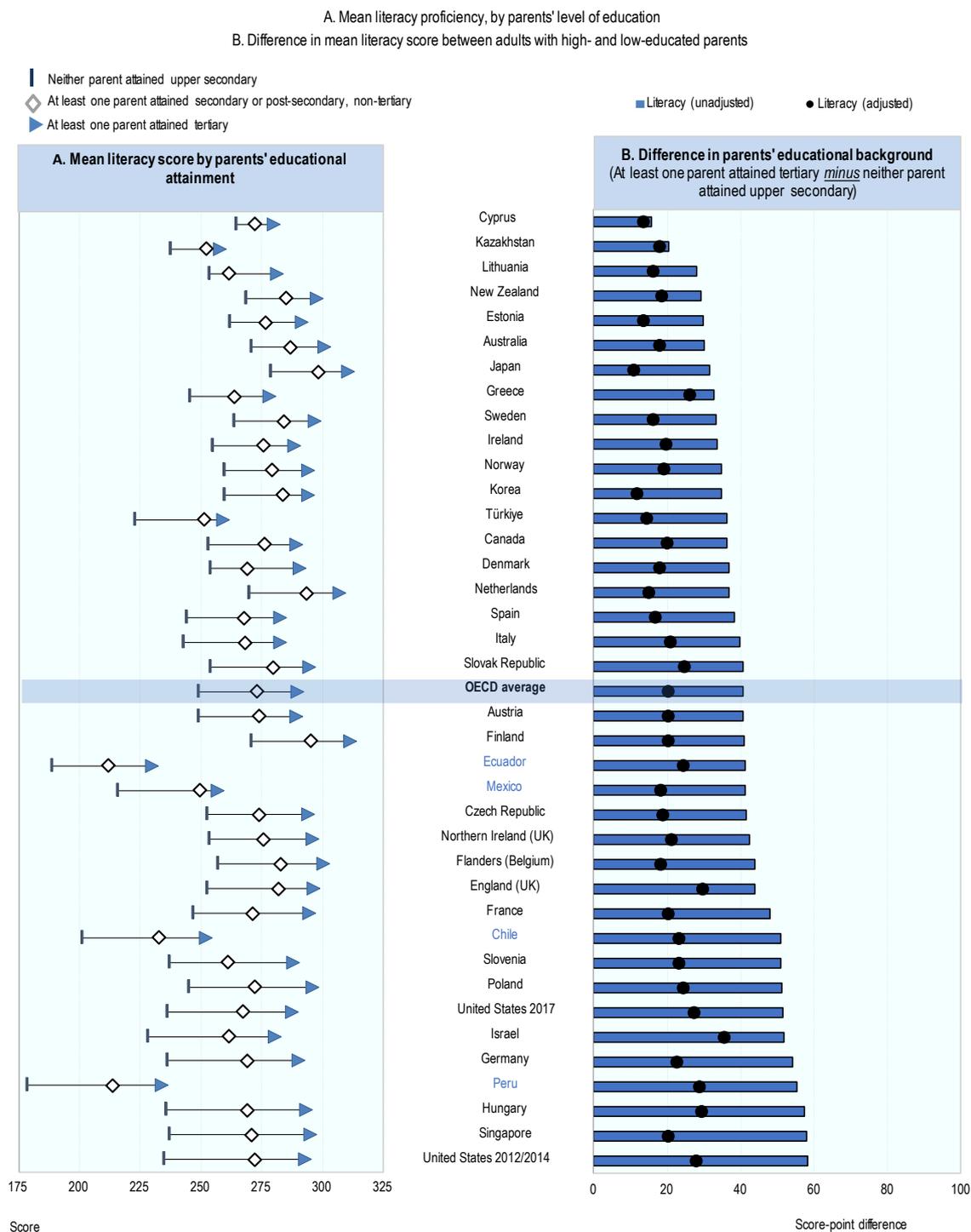
Percentage of women and men scoring at Level 2 or 3 in problem solving in technology-rich environments or having no computer experience



Note: Percentages for the problem solving in technology-rich environments scale are computed so that the sum of percentages for the following mutually exhaustive categories equals 100%: opted out of the computer-based assessment; no computer experience; failed ICT core test; below Level 1, Level 1, Level 2 and Level 3. For more detailed results for each category, see the corresponding table mentioned in the source below. Cyprus, France, Italy and Spain did not participate in the problem solving in technology-rich environments assessment. Countries and economies are ranked in descending order of the combined percentages of men scoring at Level 2 or 3.

Source: OECD (2019^[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 3.11, <https://doi.org/10.1787/888934020350>.

Figure 1.15. Differences in literacy proficiency, by parents' educational attainment



Note: All differences in Panel B are statistically significant. Unadjusted differences are the differences between the two means for each contrast category. Adjusted differences are based on a regression model and take account of differences associated with other factors: age, gender, education, immigrant and language background. Only the score-point differences between two contrast categories are shown in Panel B, which is useful for showing the relative significance of parents' educational attainment with regard to observed score-point differences. Upper secondary includes ISCED-97 3A, 3B, 3C long and 4. Tertiary includes ISCED-97 5A, 5B and 6. Countries and economies are ranked in ascending order of the unadjusted difference in literacy scores (at least one parent attained tertiary minus neither parent attained upper secondary).

Source: OECD (2019_[3]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Figure 3.12, <https://doi.org/10.1787/888934020369>.

Skills proficiency and socio-economic background

It is well known that the family background in which people grow up is a crucial factor affecting outcomes such as educational attainment or earnings. Given that people cannot choose their family background, reducing its impact on outcomes is often considered an important policy objective to increase equality of opportunity.

The best proxy for socio-economic background available in the Survey of Adult Skills is the level of educational attainment attained by the parents of the participants. Results based on this indicator confirm the importance of socio-economic background on adults' outcomes. In the first cycle of the PIAAC study, adults with at least one tertiary-educated parent scored on average 41 points more in literacy proficiency than adults from families where neither parent attained upper secondary education (Figure 1.15). In Ecuador and Mexico, the differences are very close to the OECD average, at 41 score points; but they are higher in Chile (51 score points) and Peru (55 score points).

Much of this raw difference is accounted for by differences in other personal characteristics, as socio-economic background mainly works through the intergenerational transmission of educational attainment. That is, adults with highly educated parents are more likely to attain higher education themselves. In most countries, the differences adjusted for personal characteristics are about half the size of the unadjusted ones mentioned above (Figure 1.15). Differences in literacy proficiency adjusted for personal characteristics are slightly below the OECD average of 20 score points in Mexico (18 score points), but higher in Chile (23 score points), Ecuador (24 score points) and Peru (29 score points).

Conclusion

The Latin American countries that participated in Cycle 1 of PIAAC – Chile, Ecuador, Mexico and Peru – stand out as having low overall proficiency in all three domains assessed in PIAAC. Ecuador and Peru had the lowest mean scores among the participating countries and the largest shares of working-age adults performing at the lowest proficiency levels. Chile and Mexico perform only slightly better, but their performances in most cases are also lower than the OECD average. These performances reflect a range of factors such as the quality of the education system, economic development and historical levels of educational participation. These results are also aligned with studies of school-age children, such as the Programme for International Student Assessment (PISA), which found that among economies with a per capita gross domestic product (GDP) below USD 20 000, the greater the country's wealth, the higher its mean score on the PISA reading test. This indicates a positive relationship between per capita national income and performance until a minimum threshold is reached (OECD, 2018^[8]; OECD, 2012^[9]).

The report has also highlighted the proficiency levels of different sub-groups of the population, defined according to several socio-demographic characteristics. The analysis has confirmed some expected results, such as the association between proficiency and educational attainment, the age-proficiency profile, and the extent to which men and women perform differently in different domains.

While these associations are similar to those found across most countries and economies, some peculiarities have emerged from the analysis, some of which can be traced back to each country's unique history of development and differences in policies. For example, the analysis has shown that, while Latin American countries in PIAAC tend to have lower performance across the board, they seem to be benefiting from the recent expansion in access to education. This is corroborated by more highly educated young cohorts having greater proficiency than older adults. At the same time, young early school leavers in Ecuador and Peru demonstrated an extremely low level of proficiency, which calls for targeted policies to address the needs of this particularly vulnerable group of people.

The low proficiency levels in computing skills among working-age adults in Latin American countries represent a challenge for their governments. Some commentators claim that middle-income countries

might lack the capacity to absorb the use of digital technologies compared to high-income countries, meaning their demand for and supply of ICT skills will be different. Moreover, to some extent, the use of new technology, particularly digital technology, depends on the educational levels of the population, including their information-processing skills, as does the dissemination of digitally based services. At the same time, PIAAC provides examples of very high-income countries with large proportions of adults with low proficiency in literacy and numeracy (e.g. Singapore and the United States) as well as examples of countries (Korea and Singapore) that have, over the last half century, successfully increased the proficiency of successive generations from a similar starting point to where Ecuador and Peru currently find themselves.

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Notes

¹ Taxonomy adopted by the World Bank (2019^[1])

- low-income economies are defined as those with a gross national income (GNI) per capita of USD 995 or less in 2017
- lower middle-income economies are those with a GNI per capita between USD 996 and USD 3 895
- upper middle-income economies are those with a GNI per capita between USD 3 896 and USD 12 055
- high-income economies are those with a GNI per capita of USD 12 056 or more.

² Digital texts are texts that are stored as digital information and accessed in the form of screen-based displays on devices such as computers and smart phones. Digital texts have a range of features that distinguish them from print-based texts: in addition to being displayed on screens, they include hypertext links to other documents, specific navigation features (e.g. scroll bars, use of menus) and interactivity. The Survey of Adult Skills is the first international assessment of adult literacy to cover this dimension of reading.

2 Career readiness in Latin America and the Caribbean

Despite a remarkable recent increase in attainment levels by young people in Latin America, they are still struggling in the labour market and young adults are much more likely to be unemployed than those aged 25. PISA data from 10 LAC countries show that teenagers in secondary education are struggling to form clear expectations about their future careers. Their expectations about occupations are highly concentrated in a small number of largely professional jobs and are poorly aligned with actual patterns of labour-market demand. Teenagers in LAC countries are less likely than OECD's to be offered the chance to explore potential options through important activities that allow students to engage directly with the world of work, such as job fairs, workplace visits or internships. Looking across the data, it is girls and students from the most disadvantaged backgrounds who typically have most to gain from more effective career guidance.

Introduction

This chapter focuses on how well young people (aged 15-24) living in Latin America and the Caribbean (LAC) countries are being prepared by their schools for their adult working lives. It does so in the context of continuing concerns over the success of young people in the competition for work, despite their joining the labour market more highly qualified than preceding generations. This chapter considers the non-academic skills that help students prepare for a successful transition into employment in light of patterns of labour-market demand and to develop the experience, social networks and understanding that provide important advantages in the competition for work. It also draws on comparisons with Portugal and Spain, because of historical ties to the region, and averages from OECD countries with available data. The chapter assesses the effectiveness of LAC countries in preparing youth for their working lives, drawing on international analysis of longitudinal datasets which highlight common positive relationships between teenage career-related attitudes and experiences and later labour-market outcomes (Covacevich et al., 2021^[1]). Through this comparative exercise, patterns emerge with regard to both the strengths and weaknesses of provision in Latin America and the Caribbean, leading to recommendations for more effective practice.

Every three years since 2000, the OECD Programme for International Student Assessment (PISA) has gathered information from representative samples of teenagers aged 15-16 around the world. The 2018 round of PISA surveyed more than 600 000 students from 79 countries and economies, including 10 from LAC: Argentina, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Mexico, Panama, Peru and Uruguay (OECD, n.d.^[2]). Students completed a series of academic assessments in reading, mathematics and science and responded to the Student Questionnaire which includes questions on their social background and educational and occupational expectations. A smaller number of countries opted into two further questionnaires providing information of relevance to students' readiness for labour-market entry, the Educational Career Questionnaire and the Financial Literacy Questionnaire (Table 2.1 shows which LAC countries were covered by which questionnaires).

Table 2.1. OECD PISA 2018 questionnaires exploring teenage career readiness

PISA 2018 questionnaire	Topics covered include:	Coverage of LAC countries
Student Questionnaire	Occupational expectation; educational plan; parental occupation & education; digital literacy & access; instrumental motivation; adaptability.	Argentina, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Mexico, Panama, Peru and Uruguay
Career Education Questionnaire	Career development activities; getting a job skills; immediate plans; influences on career decision making.	Brazil, Costa Rica and Panama
Financial Literacy Questionnaire	Financial management; part-time and temporary employment; career conversations; volunteering; self-employment.	Chile, Brazil and Peru

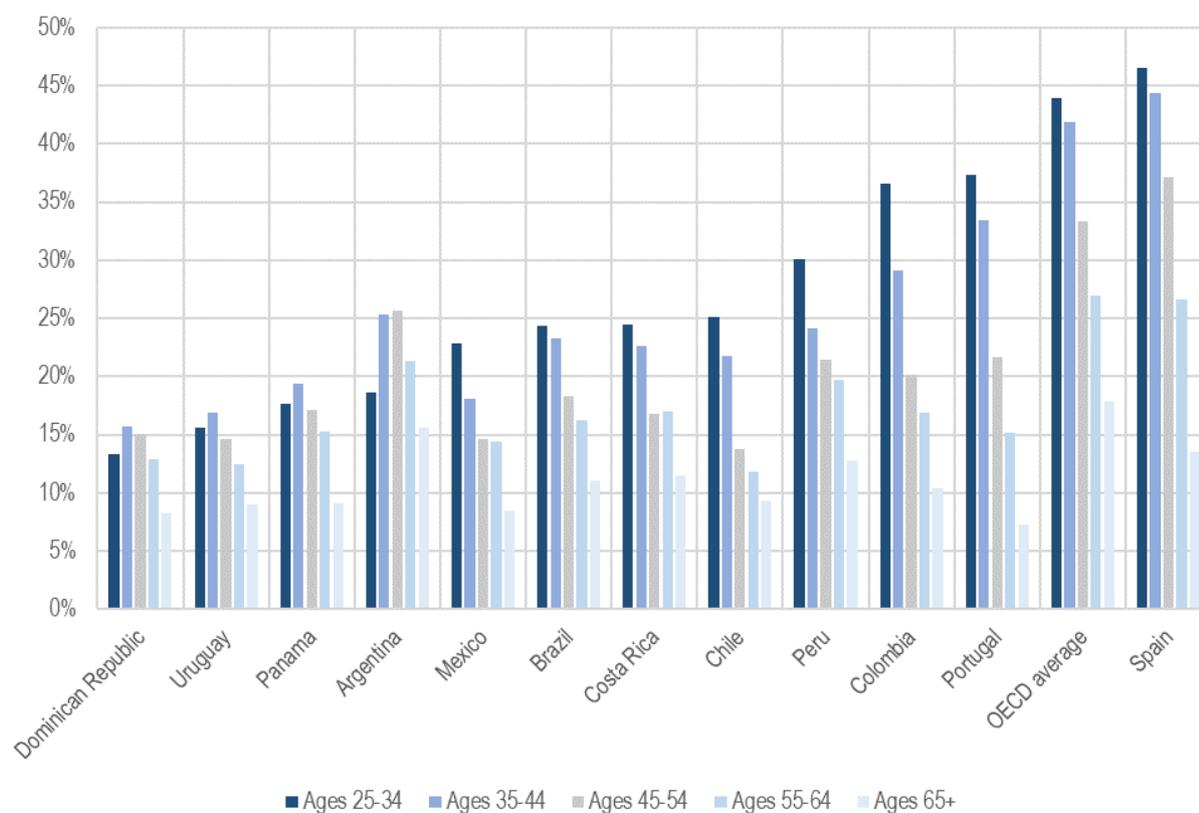
In addition, this chapter draws heavily on findings from the OECD Career Readiness project (OECD, n.d.^[3]). This study examined longitudinal datasets in 10 countries (Australia, Canada, the People's Republic of China, Denmark, Germany, Korea, Switzerland, the United Kingdom, the United States and Uruguay) to identify common predictors of better adult employment outcomes linked to teenage engagement in career-related activities, experiences and attitudes. As discussed below, many of the predictors identified allow for the comparative assessment of teenage career readiness using relevant PISA data.

Context

Educational attainment and labour-market preparedness

Around the world, the last two generations have seen a remarkable increase in the levels of education achieved by young people. They are proceeding to, and completing, upper secondary education and then moving on to tertiary education in record numbers. LAC countries are, in general, no exception to this phenomenon. In Mexico, for example, the proportion of young people completing upper secondary education increased from 39% in 2005 to 66% in 2019; in Chile it rose from 81% to 90% over a similar period. In Colombia, such upper secondary success rates rose from 68% in 2013 to 77% in 2019 (OECD, 2021^[41]). Although the trend at tertiary level is not as pronounced as in Portugal and Spain, younger adults in LAC countries are generally more likely to have attained tertiary qualifications than their older peers (Figure 2.1).

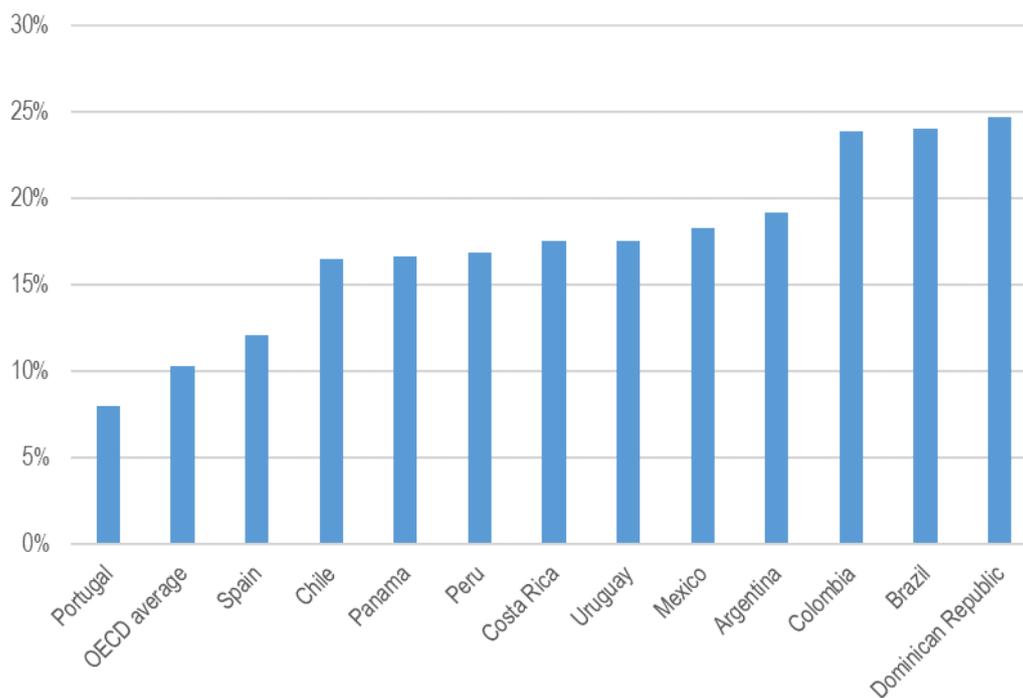
Figure 2.1. Percentage of population with tertiary education, by age group



Note: 2019. Israel, Japan, and New Zealand are omitted from the OECD average as International Labour Organization data on 10-year age groups by education are either missing or incomplete.

Source: ILO (2022^[5]), *Working-age population by sex, age and education (thousands)*, <https://ilostat.ilo.org/data/>.

However, despite apparently growing levels of human capital, as captured by academic qualifications, before the start of the COVID-19 pandemic, up to one in three 15-24 year-olds were not in employment, education or training (NEET) in LAC countries. Such NEET rates are substantially higher than in Portugal and Spain (Figure 2.2).

Figure 2.2. Percentage of youth not in employment, education or training (NEET)

Note: 2019, or most recent year available before 2019. Ages 15-24. Korea is omitted from the OECD average as ILO data are either missing or incomplete.

Source: ILO (2022^[6]), *Share of youth not in employment, education or training (NEET) by sex (%) - Annual*, <https://ilostat.ilo.org/data/>.

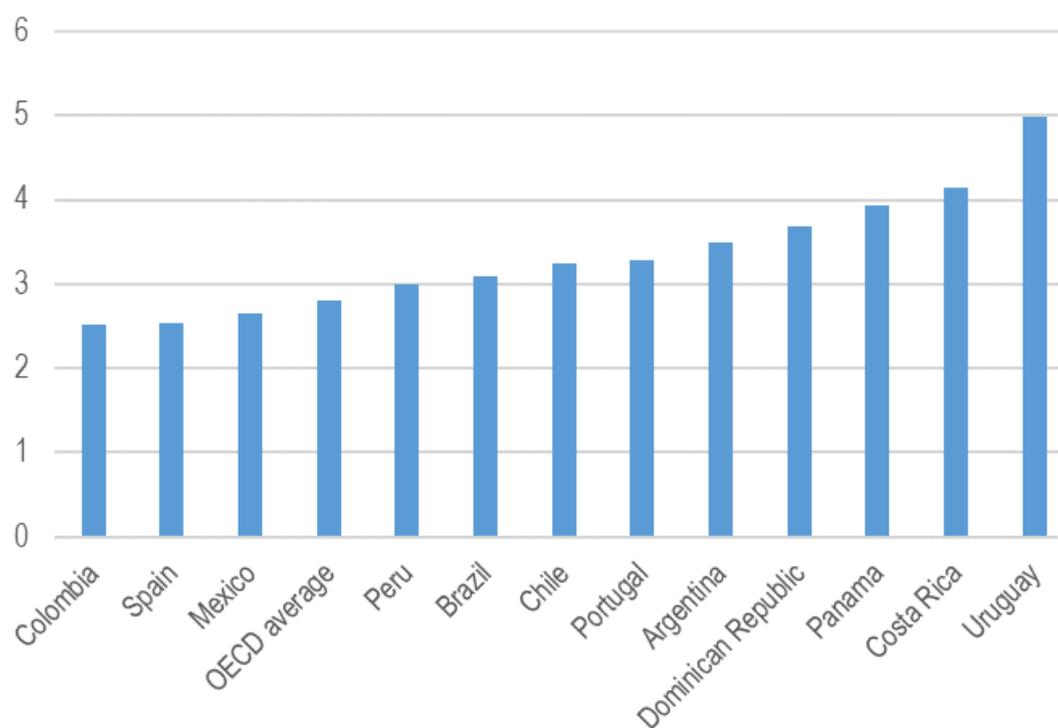
Comparing youth and adult unemployment

While high NEET and youth unemployment rates raise concerns in themselves, they provide a blunt tool for measuring the relative attractiveness of young people to employers: joblessness may be high for all workers. An alternative way of assessing the relative challenges facing young people in the competition for work is to look at the ratio of youth to adult unemployment. This ratio describes how many times higher unemployment rates are for young people (aged under 25) in than for older workers and therefore indicates the extent of employer preference for older workers, not just the state of the labour market overall. While young people always face additional challenges when they enter the labour market (Mann, Denis and Percy, 2020^[7]), the extent to which they can overcome them varies considerably between countries. Across Latin America and the Caribbean, the International Labour Organization (ILO) calculated the ratio of youth to adult unemployment in 2019 at around 3, ranging from 2.5 times higher in Colombia to 5 times higher in Uruguay (Figure 2.3). In some global regions, the ratio is much higher, reaching averages of above six in Southeast Asia and the Pacific and in Southern Asia. In Europe however, youth unemployment is commonly twice the level of adult unemployment (ILO, 2020^[8]).

The ratio reflects several factors within an economy. For example, where it is more difficult for employers to dismiss workers or where employers have poor understanding or confidence in educational qualifications, they can be expected to be more conservative in their hiring practices, placing greater emphasis on prior experience (Breen, 2005^[9]). Moreover, where national minimum wages are set at levels that align poorly with the anticipated productivity of new workers, employers may decide against the risk of hiring young people (Brown, Gilroy and Kohen, 1983^[10]). However, the ratio also provides insight into the effectiveness of education systems in preparing young people for the competition for work. In Switzerland and Germany for example, countries with strong vocational education systems, the ratio is

very low (around 1.5). In these countries, mass participation apprenticeship programmes give young people the opportunity to address factors which may reduce their attractiveness to potential recruiters: they can gain work-based experience, develop connections with potential employers and build a first-hand understanding of work culture and recruitment practices (Mann, Denis and Percy, 2020^[7]; Pastore, 2018^[11]).

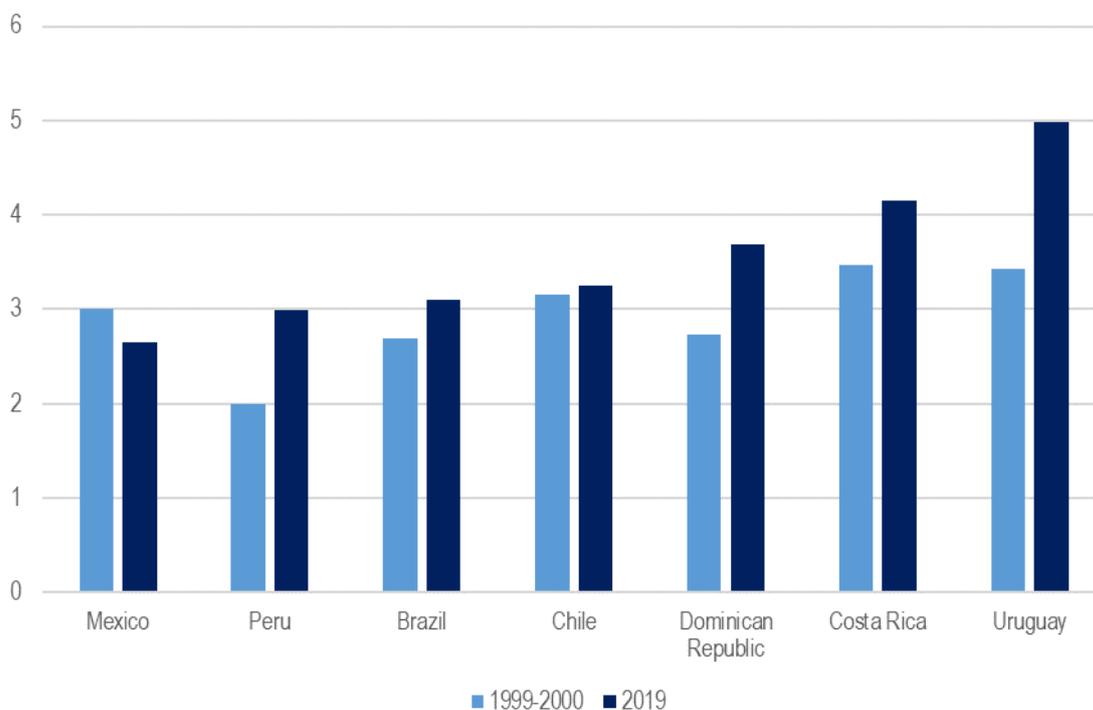
Figure 2.3. Ratio of youth to adult unemployment



Note: 2019, or most recent year available before 2019.

Source: ILO (2022^[12]), *Unemployment rate by sex and age (%) - Annual*, <https://ilostat.ilo.org/data/>, accessed on 2 June 2022.

While it might be expected that the ratio of youth to adult unemployment would have narrowed over the last 20 years as youth have entered the labour market more highly qualified, this is generally not the case in LAC countries (Figure 2.4). Of the countries considered in this chapter, for which data are available, only Mexico has seen the ratio fall since the turn of the century. The youth labour-market participation rate in LAC countries has been declining modestly but persistently over the last generation, falling from 54% in 2000 to 49% in 2020 (ILO, 2020^[8]). NEET rates have also moved slightly upwards over the last 20 years, from 20.1% in 2000 to 21.7% in 2020. Young people in LAC countries are also more likely than their older peers to work informally (ILO, 2020^[8]).

Figure 2.4. Ratio of youth to adult unemployment, 1999-2000 versus 2019

Note: All recent figures are from 2019, or most recent year available before 2019 for available LAC countries. Older figures for Brazil, Peru and Uruguay are from 1999, while older figures for Chile, Costa Rica, the Dominican Republic and Mexico are from 2000.

Source: ILO (2022^[12]), *Unemployment rate by sex and age (%) - Annual*, <https://ilostat.ilo.org/data/>, accessed on 2 June 2022.

Understanding why LAC youth struggle in the competition for work

There are a number of possible explanations why greater educational success is not translating into better employment. These results may raise questions about the quality of educational provision and the true extent to which qualifications and additional years of education are capturing increases in knowledge and skills (OECD, 2017^[13]). Relatedly, the continuing challenge of youth employment may relate to mismatches between the supply of narrowly developed skills and the demand for them. In their responses to global surveys, employers from Latin American countries are more likely than their counterparts in other regions to state that a workforce with the wrong skills (either too highly educated, not educated enough or lacking the right kinds of skills) is a major constraint on their operations (OECD, 2021^[14]). Informality in the labour market, which is marked in many LAC countries, may also make it more difficult for young people to find attractive employment that reflects their qualifications and skills after leaving education (ILO, 2015^[15]; OECD, 2017^[13]).

The rest of this chapter, however, explores the question from a different perspective and asks whether educational institutions in LAC countries are preparing young people effectively for the non-academic dimensions of the competition for employment. It explores data relevant to the engagement of young people in the labour market while they are still in school, as well as what schools have been doing to prepare young people for their working lives through career guidance programmes.

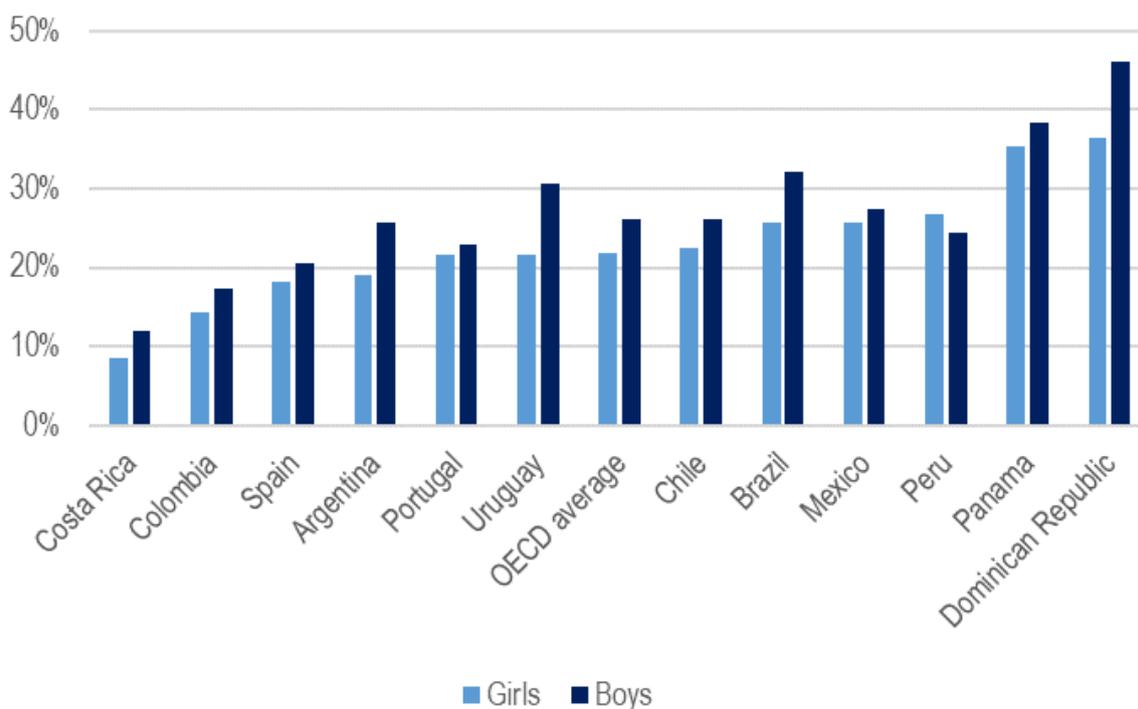
Occupational expectations of youth in Latin America and the Caribbean

Occupational uncertainty

The OECD PISA 2018 survey asks students to name the kind of job they expect to have when they are about 30 years old. Students who can name an expected field of employment can be designated as “career certain” whilst their peers who cannot name an occupation, or whose thinking is seen as too vague to allow for identification, are classified as “uncertain” by researchers (Covacevich et al., 2021^[16]). The results for LAC countries show considerable variation in the extent of such career uncertainty (Figure 2.5). In the Dominican Republic, 46% of boys and 36% of girls were unable to name an occupational expectation. At the other end of the spectrum, only one in ten young people in Costa Rica can be labelled as uncertain. Across most LAC countries, as across the OECD, boys are on average more likely to be uncertain than girls. Considered alongside data presented below on teenage career concentration, many young people across the LAC region can be seen to be thinking about their careers in ways that raise concerns; they are struggling to visualise their future in work even as they are facing key decisions about their secondary education and beyond.

Figure 2.5. Career uncertainty among 15-year-olds, by gender

Percentage of students who were uncertain what job they expected to have by the age of 30



Note: The PISA questionnaire asks young people “What kind of job do you expect to have when you are about 30 years old?” Respondents who either did not answer the question, gave a vague answer (such as “a good job” or “in a hospital”), or explicitly indicated that they were undecided are considered “uncertain”.

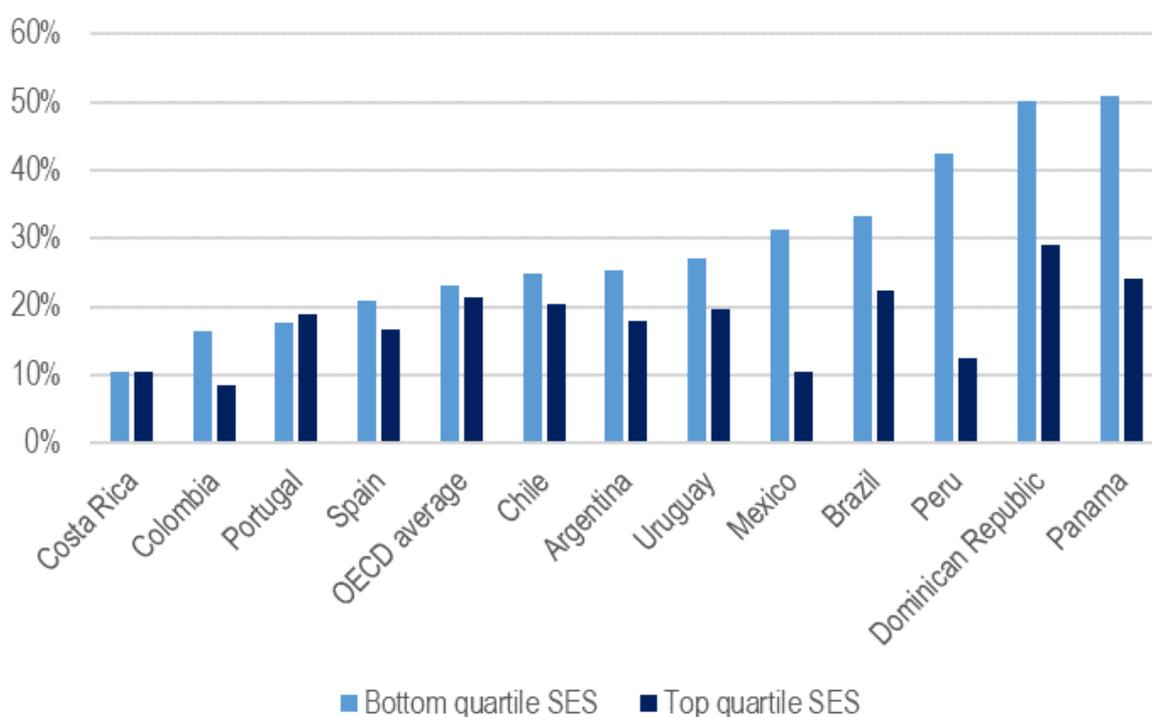
Source: Authors’ calculations using OECD (2019^[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Career uncertainty is particularly high in a number of countries among youth from the most disadvantaged quartile of socio-economic backgrounds (Figure 2.6). In PISA, a student’s socio-economic status is estimated by the PISA index of economic, social and cultural status (ESCS), a composite measure that

combines into a single score the financial, social, cultural and human capital resources available to that student. In practice, it is derived from several variables related to students' family background that are then grouped into three components: parents' education, parents' occupations and an index summarising a number of household possessions that can be taken as proxies for material wealth or cultural capital, such as possession of a car, the existence of a quiet room to work in, access to the Internet, the number of books and other educational resources available in the home (Mann, Denis and Percy, 2020^[7]). In Peru and Mexico, the most disadvantaged quartile of students – based on this index – are more than three times more likely than their more advantaged peers to be uncertain about their career plans. In Panama and the Dominican Republic, half of the most socially disadvantaged students are unable to identify a potential future career.

Figure 2.6. Career uncertainty among 15-year-olds, by socio-economic status

Percentage of students who were uncertain what job they expected to have by the age of 30



Note: The PISA questionnaire asks young people “What kind of job do you expect to have when you are about 30 years old?” Respondents who either did not answer the question, gave a vague answer (such as “a good job” or “in a hospital”), or explicitly indicated that they were undecided are considered “uncertain”. Socio-economic status (SES) is defined using the PISA index of economic, social and cultural status (ESCS).
Source: Authors' calculations using OECD (2019^[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Occupational ambitions

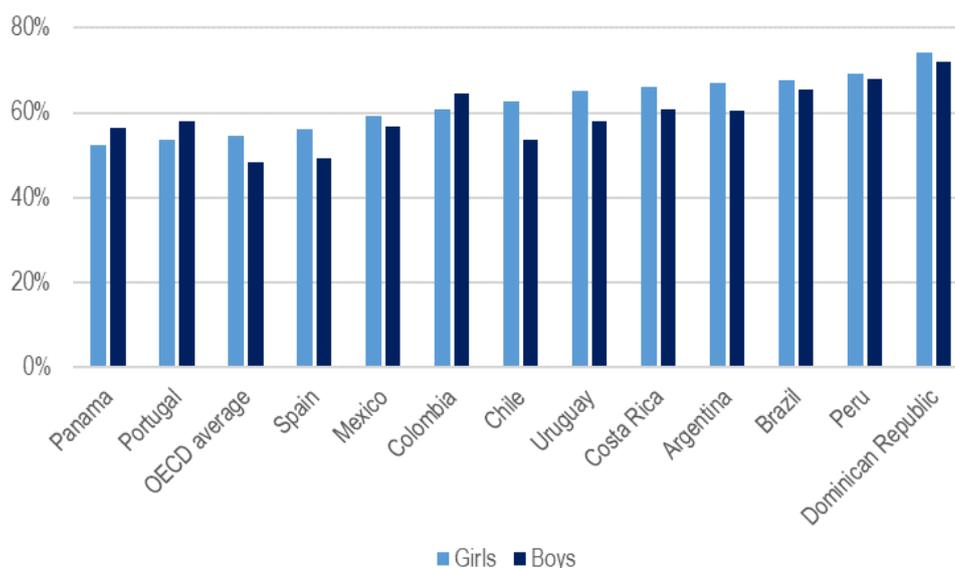
Where students could name an expected occupation, their answers were coded by analysts against the 2008 version of the International Standard Classification of Occupations (ISCO) (ILO, 2012^[18]). ISCO groups jobs into 10 major groups and then further categorises them into increasingly precise levels (2, 3 and 4 digit level). Importantly, the question in the PISA survey asks students about their occupational expectations, rather than aspirations: the job they expect, rather than hope, to secure. Consequently, the responses can be expected to include some degree of realism in the assessments of the young participants.

The occupational expectations in LAC countries among both girls and boys are typically more concentrated than the OECD average, as well as those in Portugal and Spain. Figure 2.7 shows the percentage of girls and boys who say that they expect to work in one of the 10 most popular occupational choices among their fellow girls or fellow boys. For both girls and boys, the occupational expectations in LAC countries are typically more concentrated than OECD averages and in Portugal and Spain. Expectations were most concentrated in the Dominican Republic where, among students who expressed an expectation, 74% of girls and 72% of boys anticipated working in one of just ten jobs by 30. Annex Table 2.A.1 lists the most popular occupational expectations for boys and girls in 10 LAC countries.

With the exception of Mexico, girls' occupational expectations are more highly concentrated than boys' expectations. On average across the 10 LAC countries for which data are available, 64% of girls naming an occupational expectation anticipate working in one of the top ten jobs. For boys, the figure is slightly lower at 62%. This gender difference aligns with findings in most OECD countries and may reflect the composition of labour markets where girls' choices are constrained due to patterns of labour-market segmentation and discrimination. However, one striking finding from the data is that girls in LAC countries are more likely to name jobs that are typically dominated by men. In the LAC countries, girls expect to be working as accountants, sportspeople, members of the armed forces, chefs, pilots and especially engineers (Annex Table 2.A.1). None of these professions are found among the top ten occupations identified by girls on average across the OECD countries (Mann et al., 2020^[19]).

Figure 2.7. Concentration of career expectations among 15-year-olds, by gender

Percentage of students who expected to work in one of the 10 most popular occupational choices among their peers



Source: Authors' calculations using OECD (2019^[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

The importance of occupational expectations

The PISA question on the occupational expectations of young people provides insight into the effectiveness of labour-market signalling in LAC countries (Muller, 2005^[20]). An early sense of vocational identity can be positive for young people, helping them to achieve their occupational plans (Schoon and Parsons, 2002^[21]). However, collectively the data on the occupational expectations of youth in LAC countries raise concerns in relation to longitudinal analyses and in comparison with actual patterns of employer demand.

The consequences of highly concentrated occupational expectations

As discussed above, young people in LAC anticipate working in very narrow parts of the labour market. For example, in Brazil, Colombia and Costa Rica, more than one-fifth of girls expect to be a doctor by the age of 30; in the Dominican Republic the share is one-quarter, with a further 20% expecting to work either as a teacher or engineer (Annex Table 2.A.1). A small number of recent studies have looked at the potential long-term consequences of high degrees of concentration in teenage occupational expectations. They explore the hypothesis that students naming more original career expectations may have devoted great consideration to their plans for the future, resisting the influence of peer thinking and potentially preparing for job roles where there they will encounter lower levels of competition (Percy and Schoon, 2021^[22]). OECD analysis of longitudinal data from Australia, Canada, Denmark and Switzerland explored whether there were labour-market penalties (typically at the age of 25) linked to those teenagers with more popular career expectations (among the 10 most popular expectations by gender) compared to those with more original expectations (all other stated expectations). In Switzerland, no relationship was found. In Australia and Denmark there were positive relationships between more original teenage career expectations and higher earnings in adulthood for students in some circumstances (Covacevich et al., 2021^[16]). Forthcoming longitudinal analysis from the United Kingdom suggests that girls can expect to benefit from more original teenage job plans (Percy and Schoon, 2021^[22]). In Canada, however, a negative significant relationship has been found between greater originality in career plans and employment outcomes (Covacevich et al., 2021^[11]). Consequently, while data are currently limited and inconclusive, they do point towards there being some penalties for at least some students linked to what can be described as a lack of originality in occupational expectations.

Mismatched occupational expectations and labour-market composition

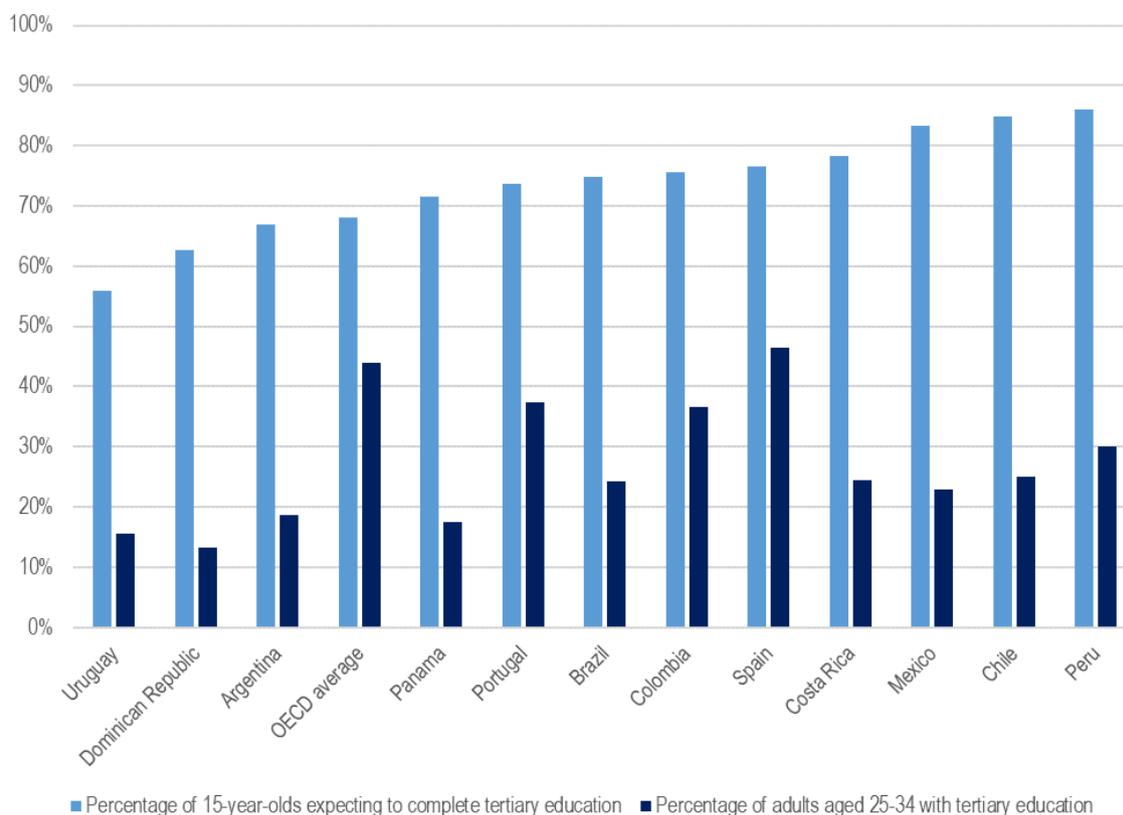
International studies highlight the frequency of gaps between teenage career aspirations and actual patterns of labour-market demand (OECD, 2017^[23]). Overwhelmingly, youth around the world expect to be working in managerial or professional occupations by the age of 30 (ISCO major groups 1 and 2). At an individual level, the international literature has shown that such teenage ambition is related to better employment outcomes in young adulthood – more ambitious teenagers can typically expect better employment outcomes than their less ambitious peers leaving education with similar levels of academic achievement (Covacevich et al., 2021^[11]). However, more broadly, highly concentrated and mismatched patterns of career ambition raise concerns over the efficacy of labour-market signalling.

There are considerable discrepancies between the occupational expectations among LAC 15-year-olds, as recorded in PISA 2018, and ILO data on the distribution of the actual labour force. In LAC, the trend for concentrated career ambitions is particularly strong and is focused mainly on ISCO major group 2 (professionals). This group includes sub-groups covering science and teaching professionals; health professionals; teaching professionals; business and administration professionals; information and communications technology professionals; and legal, cultural and social professionals (ILO, 2012^[18]). Students in the LAC countries taking part in PISA 2018 had a greater interest in these careers than on average in OECD countries (excluding LAC members). In non-LAC OECD countries, on average, 47% of boys and 65% of girls anticipate a career within ISCO major group 2 by the age of 30. In the 10 LAC countries for which data are available from PISA 2018, the average was 65% of boys and 78% of girls. Yet, within LAC labour markets, relatively few people work in such occupations. On average across these 10 countries, 7.7% of men and 13.7% of women worked in the professional occupations listed in ISCO major group 2 in 2019, compared with 18.8% of men and 26.2% of women across OECD countries (ILO, n.d.^[24]).

Unsurprisingly, large proportions of LAC youth also anticipate completing tertiary education. Across the 10 LAC countries for which PISA 2018 data are available, 74% of students expect to complete tertiary education on average. Expectations are particularly high among girls: in Brazil, Chile, Costa Rica, Peru

and Mexico, between 80% and 90% of girls say that they will achieve a university-level education. Most students are unlikely to achieve such educational ambitions, however. On the eve of the pandemic, fewer than one-quarter (23.5%) of 25-34 year-olds in these 10 countries had obtained a tertiary level qualification (Figure 2.8).

Figure 2.8. Tertiary expectations among 15-year-olds and tertiary attainment among young adults



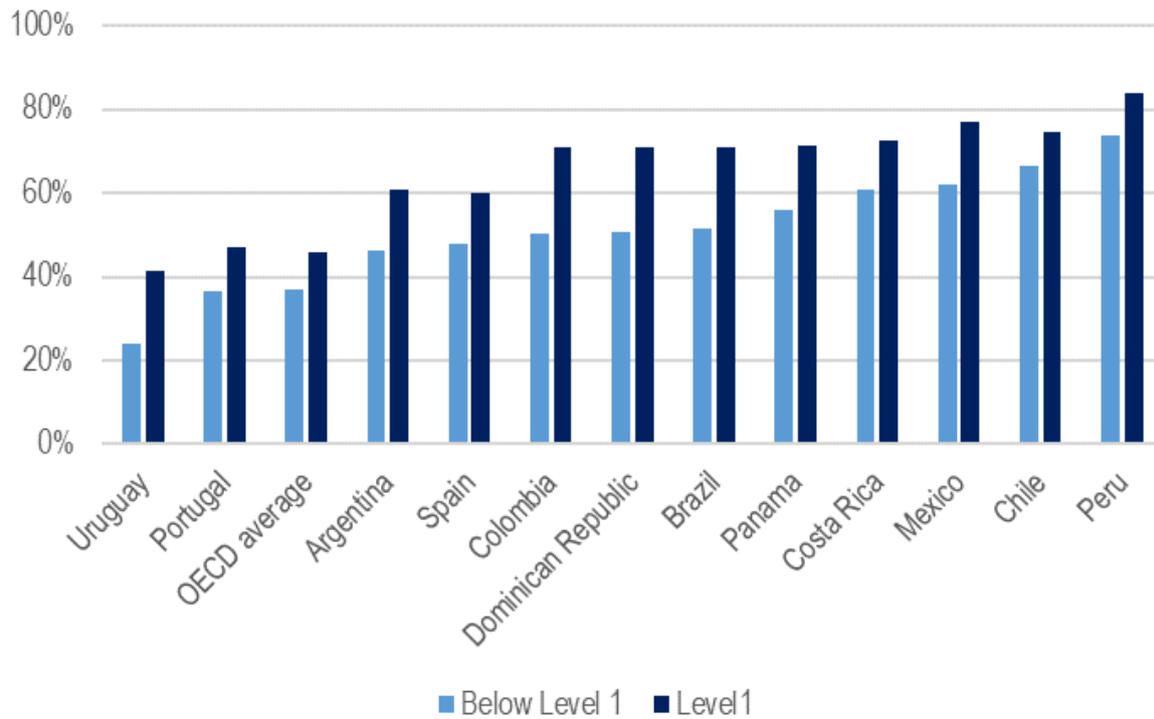
Note: 2019. Israel, Japan, and New Zealand are omitted from the OECD average as ILO data on the 25-34 age group by education are either missing or incomplete.

Sources: ILO (2022^[5]), *Working-age population by sex, age and education (thousands)*, <https://ilostat.ilo.org/data/>; Authors' calculations using OECD (2019^[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

In contrast with OECD countries, levels of educational ambition do not vary that greatly by socio-economic background. Among LAC students with higher scores in the PISA academic assessments – suggesting they have the ability to succeed in tertiary education – a high proportion of students from all backgrounds plan to attain that level. While this is a positive phenomenon, the data for less well-performing students raise further concerns about the level of educational ambition in LAC countries. Many of the lowest achievers also aspire to tertiary education, suggesting confusion about the academic ability required to benefit from higher education. As Figure 2.9 shows, high proportions of youth in LAC countries with very weak literacy skills (below Level 2) expect to pursue tertiary education. In the PISA assessment, students who do not attain Level 2 proficiency in reading often have difficulty when confronted with written material that is unfamiliar, or that is of moderate length and complexity. They usually need to be prompted with cues or instructions before they can engage with the text. The United Nations Sustainable Development Goals have identified Level 2 as the “minimum level of proficiency” that all children should acquire by the end of secondary education (OECD, 2019^[25]).

Figure 2.9. Tertiary expectations among low performers on the PISA reading test

Percentage who expect to attain tertiary education

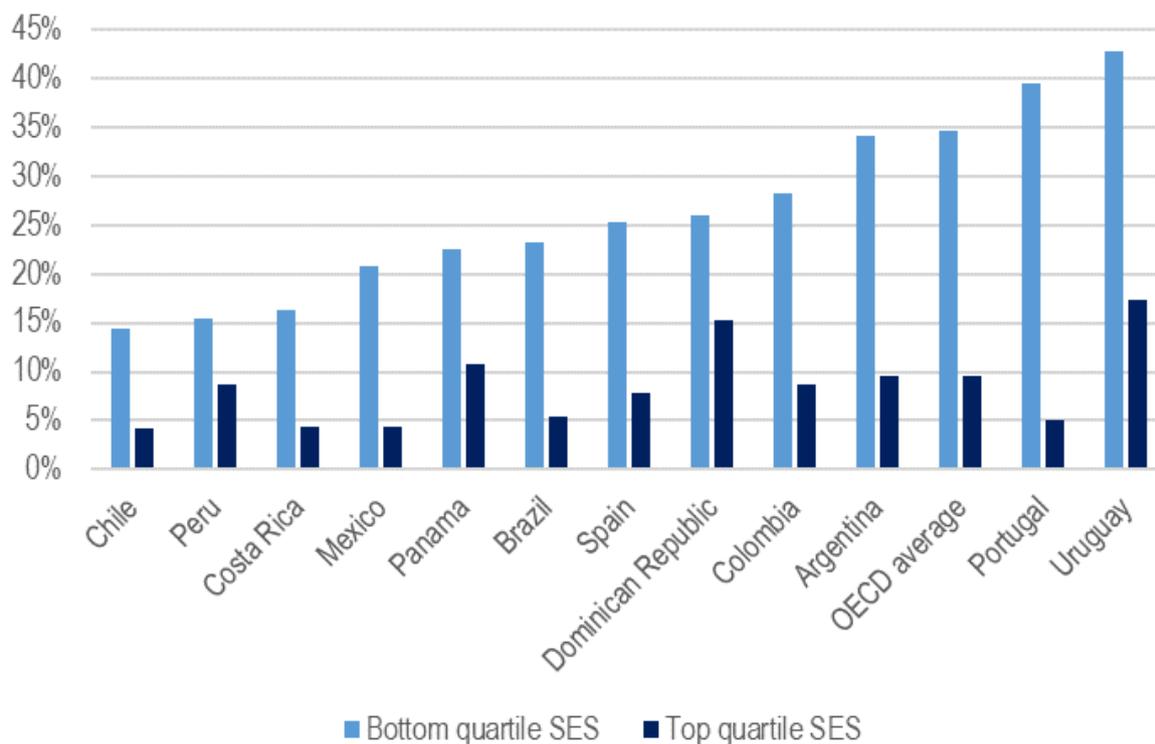


Source: Authors' calculations using OECD (2019_[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Many young people from LAC countries also anticipate working in jobs that commonly require university attendance, but do not plan to pursue tertiary education (Figure 2.10). Such students can be characterised as having misaligned ambitions and longitudinal data point towards such students performing more poorly in the early labour market than would be expected given their personal, social and academic characteristics (Covacevich et al., 2021_[16]; Covacevich et al., 2021_[1]; Mann, Denis and Percy, 2020_[7]). Such misalignment is especially common among students from the most disadvantaged backgrounds. These students face especially high risks of poorer outcomes than might otherwise be expected from their academic attainment.

Figure 2.10. Misaligned educational and career expectations among 15-year-olds

Percentage of students with high occupational ambitions but who do not plan to attain tertiary education



Note: Socio-economic status is defined using the PISA index of economic, social, and cultural status (ESCS).

Source: Authors' calculations using OECD (2019_[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

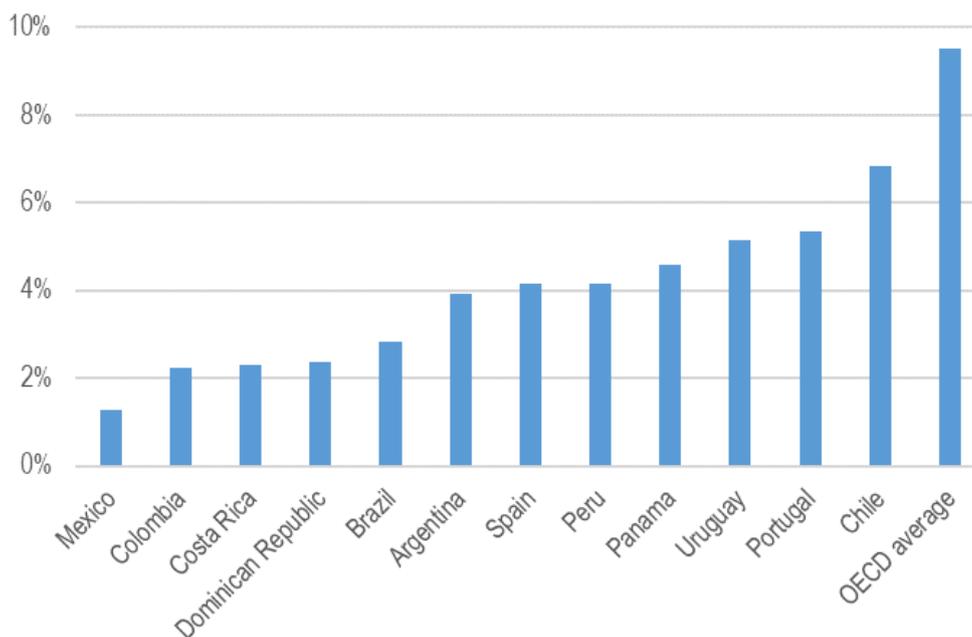
In contrast, students in LAC countries are less interested in working in skilled or semi-skilled occupations. There are three major ISCO groups related to skilled and semi-skilled employment, which in many countries is commonly entered through programmes of vocational education and training (VET):

- Major group 6: Skilled agricultural, forestry and fishery workers
- Major group 7: Craft and related trades workers
- Major group 8: Plant and machine operators and assemblers.

In LAC countries, as well as in Portugal and Spain, the proportions of students expressing an interest in these careers are low – 1% to 7% (Figure 2.11). In the 10 countries for which data are available, on average 6% of boys anticipate working in an ISCO 6, 7 or 8 occupation, compared to 26% of boys in Germany, 25% in Switzerland, 10% in Portugal, 8% in Spain and an OECD average (all countries) of 17%. On average, in the LAC countries which are the focus of this chapter, 39% of adult men work in such professions (ILO, n.d._[24]). The levels of interest in such professions among girls are especially low. Only in Argentina, Brazil, Chile and Panama is it possible to detect any interest from girls in skilled and semi-skilled employment, and even here fewer than 2% of girls expect to work in such jobs.

Figure 2.11. Expectations of skilled and semi-skilled employment among 15-year-olds

Percentage of students expecting to work in jobs in ISCO major groups 6, 7 and 8



Note: In the International Standard Classification of Occupations (ISCO), ISCO 6 comprises skilled agricultural, forestry and fishery workers; ISCO 7 comprises craft and related trades workers; and ISCO 8 plant and machine operators, and assemblers (ILO, 2012_[18]).

Source : Authors' calculations using OECD (2019_[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

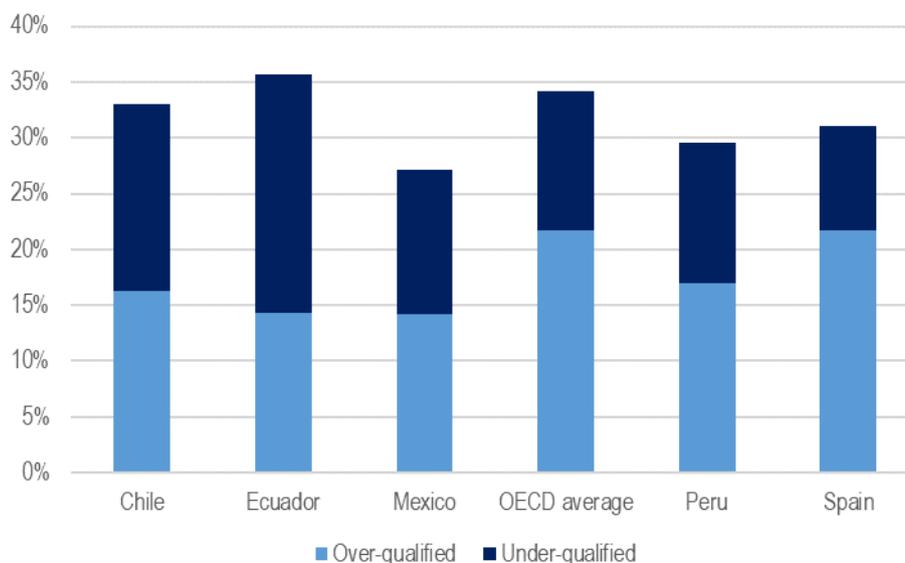
Employment penalties of labour-market mismatches

One potential consequence of teenage occupational expectations bearing little relation to the actual patterns of labour-market demand, is that their future employment could align poorly with their educational qualifications. OECD data from the Programme for International Assessment of Adult Competencies (PIAAC) illustrate the long-term penalties associated with mismatches between the educational profile of young adults and the jobs they do (OECD, 2016_[26]). PIAAC provides data on two types of mismatch: by level of qualification and by field of study. Looking at the labour-market experiences of 16-34 year-olds, mismatch by level of qualification is common in the four Latin American countries taking part in PIAAC, as it is across the OECD (Figure 2.12).

PIAAC data show, moreover, that young adults (aged 16-34) who are overqualified for their jobs can expect to be penalised in the labour market (Figure 2.13). They can expect to earn less than peers who are working in comparable jobs, but whose qualifications are well matched. The scale of the penalty rises from 4% in Ecuador to 33% in Peru. The penalties are weaker for mismatches in the field of study. As is the case across the OECD, there is no strong trend in earning variations in those LAC countries for which data are available.

In terms of job satisfaction, there is a clear pattern in both LAC countries and across the OECD. Young adults who are overqualified for their occupation are much less likely to agree that they are satisfied or very satisfied with their job (Figure 2.14). Similarly, those who work in an occupation connected with their field of study are more consistently likely to agree that they are satisfied with their jobs (Figure 2.15).

Figure 2.12. Qualification mismatches among 16-34-year-old workers

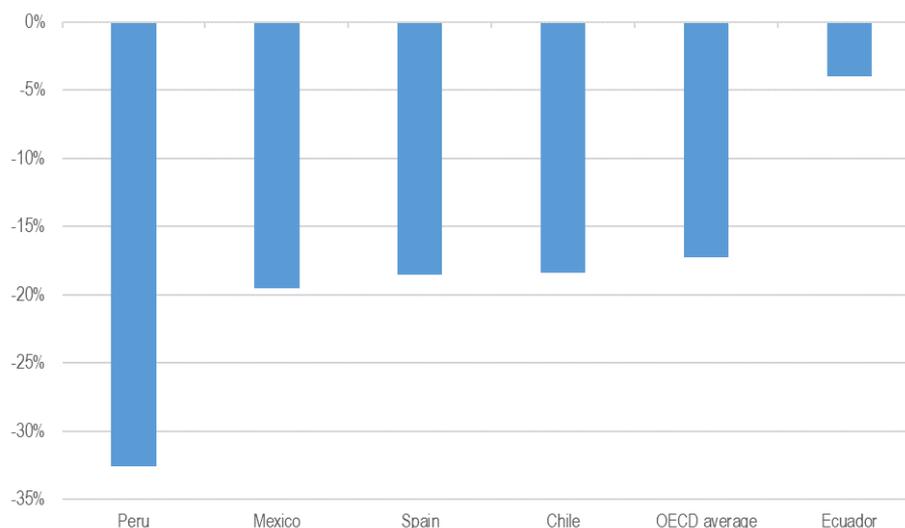


Note: In PIAAC, full-time workers are asked what the usual qualifications would be, if any, “that someone would need to get (their) type of job if applying today”. The answer is compared to their actual qualification to identify mismatches. If they are more highly educated than their job requires, workers are classified as overqualified; if the opposite is true, they are classified as underqualified.

Source: OECD (2019^[27]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Tables Chapter 5, <https://doi.org/10.1787/888934020920>.

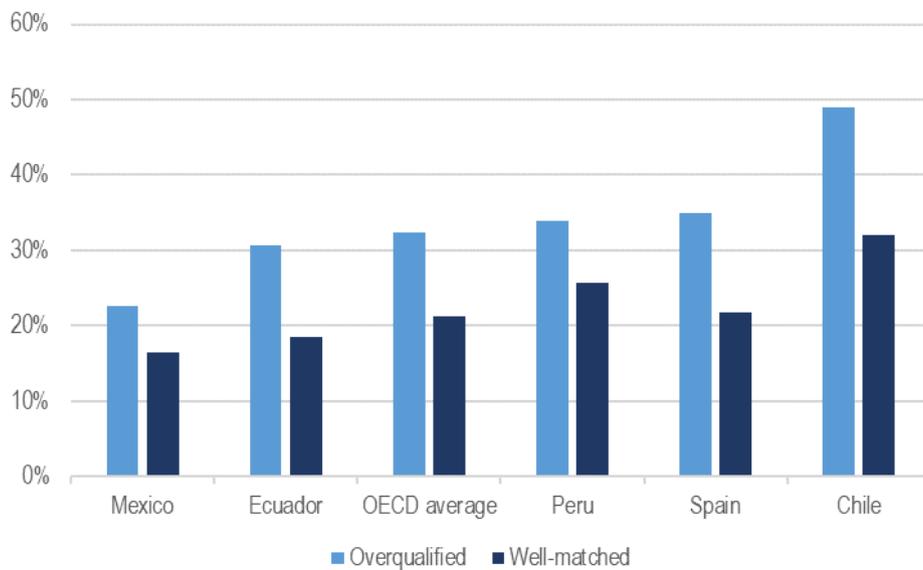
Figure 2.13. Earnings penalty for overqualification among 16-34-year-old workers

Difference in earnings between overqualified young workers and their well-matched counterparts



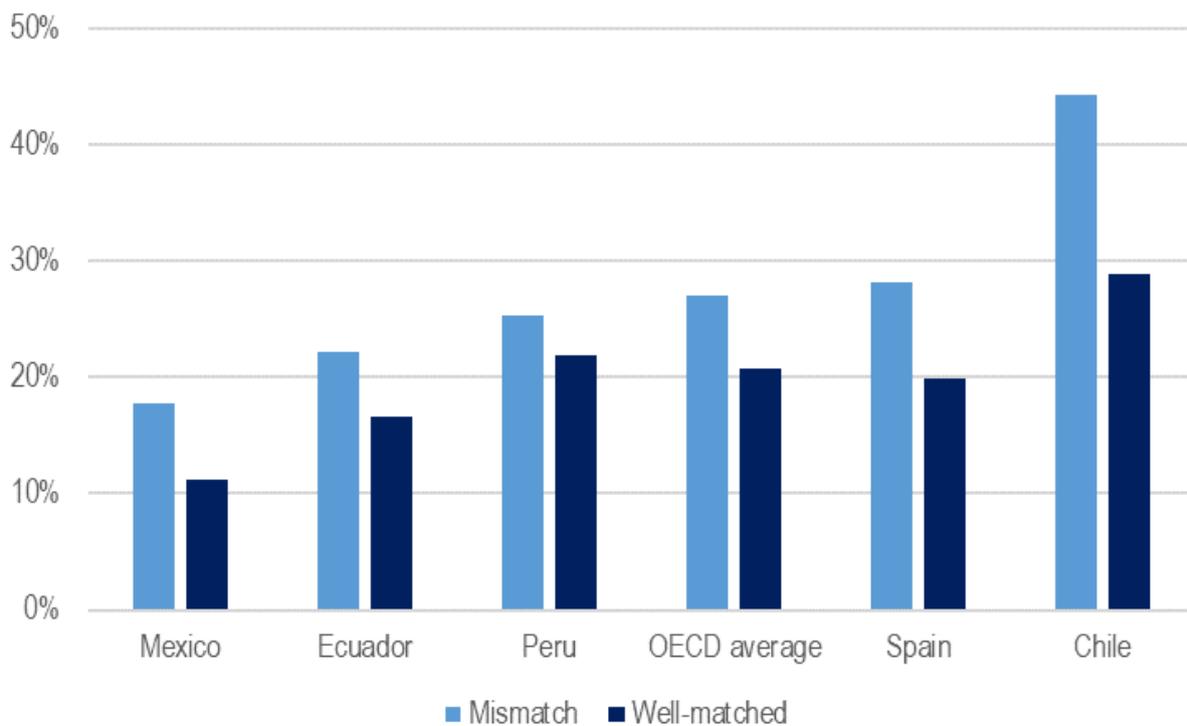
Source: OECD (2019^[27]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Tables Chapter 5, <https://doi.org/10.1787/888934020920>.

Figure 2.14. Job satisfaction penalty for overqualification among 16-34-year-old workers



Note: Percentage responding that they were either “extremely dissatisfied”, “dissatisfied” or “neither dissatisfied or satisfied” with their jobs.
 Source: OECD (2019^[27]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Tables Chapter 5, <https://doi.org/10.1787/888934020920>.

Figure 2.15. Job satisfaction penalty for field-of-study mismatch among 16-34 year-old workers



Note: Percentage responding that they were either “extremely dissatisfied”, “dissatisfied”, or “neither dissatisfied or satisfied” with their jobs.
 Source: OECD (2019^[27]), *Skills Matter: Additional Results from the Survey of Adult Skills*, Tables Chapter 5, <https://doi.org/10.1787/888934020920>.

Career guidance in LAC countries

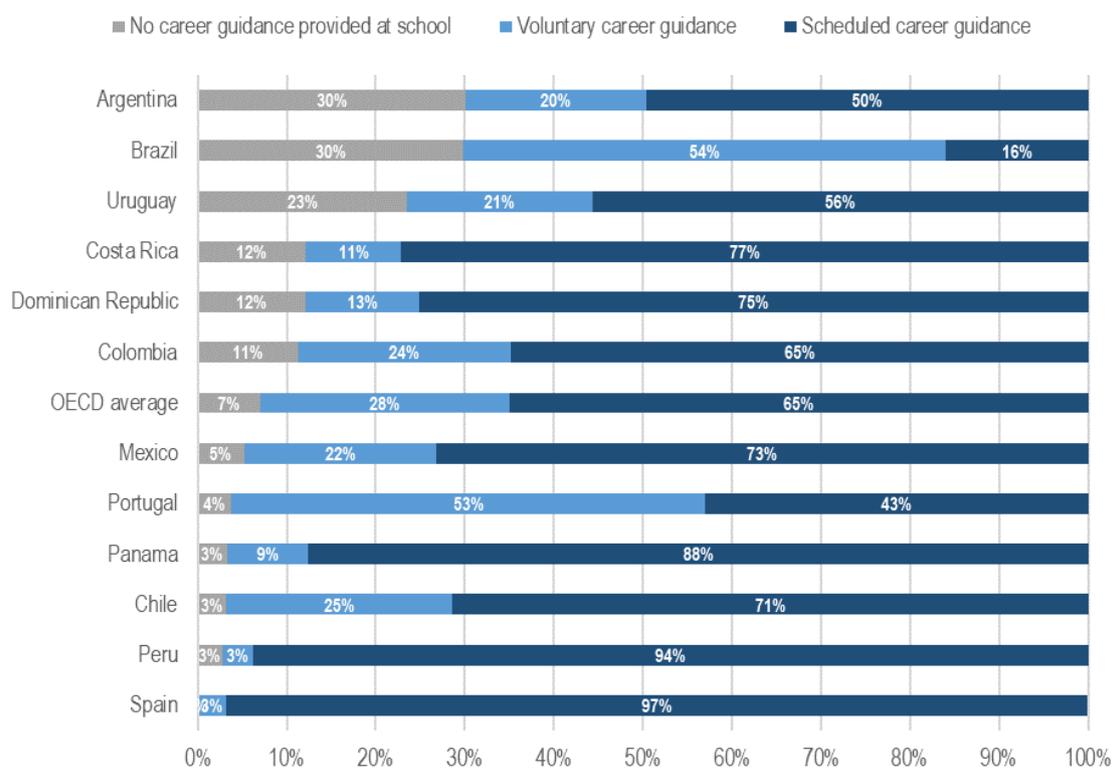
The PISA data reflect the occupational expectations of young people aged between 15 and 16. In many educational systems, young people of this age will shortly have the opportunity to specialise in their studies (with consequences for their tertiary education choices) or to enter the labour market. Ensuring that 15-year-olds understand the educational requirements of their chosen or expected careers will be a key factor in their labour-market transition. Upper secondary education in Mexico, as in other LAC countries, has a high dropout rate driven by several factors, including insufficient access to career information and guidance (OECD, 2017^[13]).

Provision of career guidance in LAC secondary schools

The PISA 2018 study asks the principals of schools whose students are taking part in the survey about the delivery of career guidance. Principals are asked whether guidance is made available to students within the school and, if so, whether it has to be sought out voluntarily by students or is formally scheduled into their time. Across OECD countries, on average, only 7% of schools do not provide career guidance, while it is compulsory for students to take part in scheduled career guidance in 65% of schools (Figure 2.16).

Figure 2.16. Career guidance provision in schools

Percentage of schools



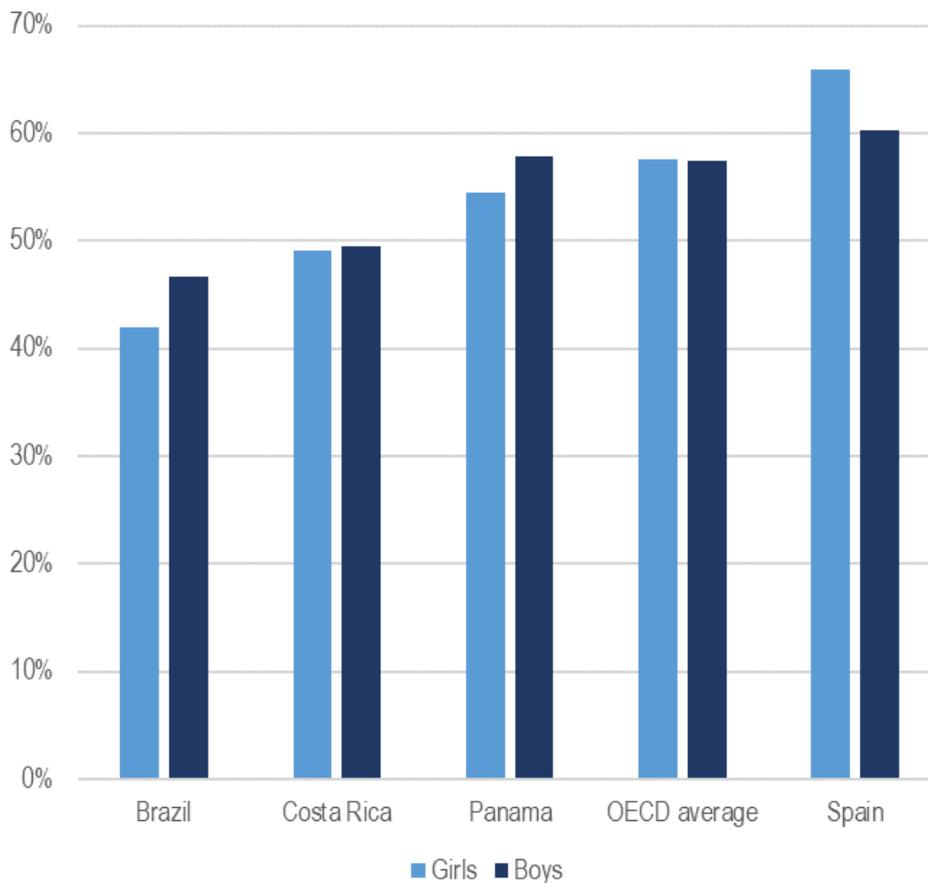
Source: Authors' calculations using OECD (2019^[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

As Figure 2.16 shows, there is considerable variation among the LAC countries taking part in PISA 2018. In Argentina and Brazil, nearly one-third of schools do not offer career guidance. Where guidance is available, it is often not scheduled into the curriculum, and such optional guidance raises concerns.

Students' attitudes to careers are heavily shaped by often unspoken assumptions and expectations linked to social backgrounds (Mann, Denis and Percy, 2020^[7]; Musset and Mytna Kurekova, 2018^[28]). Effective careers guidance systems challenge such thinking by requiring student engagement (Mann, Denis and Percy, 2020^[7]). Consequently, optional access to guidance can be expected to be less effective in challenging inequalities than compulsory provision. Furthermore, even where guidance is available within school, the quality of provision may be insufficient (OECD, 2017^[13]).

Figure 2.17. Engagement with career advisers, by gender

Percentage of students reporting they have spoken with a career adviser by the age of 15



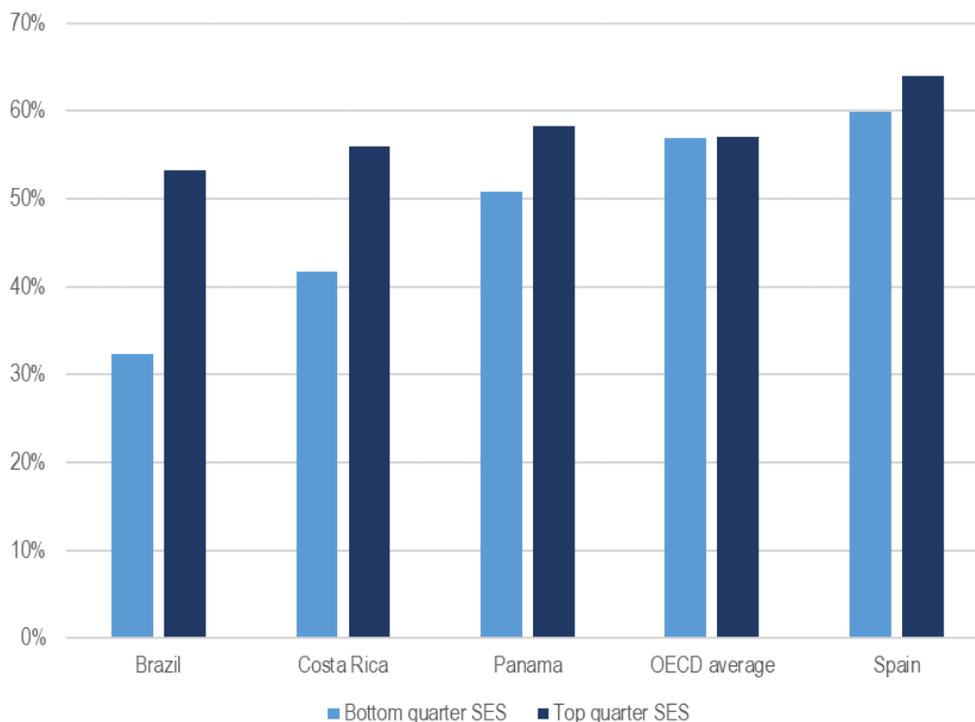
Source: Authors' calculations using OECD (2019^[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Among the countries for which data are available, students in LAC countries are less likely than their peers in Spain and OECD countries to have spoken with a guidance counsellor by the age of 15. In the three LAC countries for which PISA 2018 data are available, only Panama has comparable levels of engagement with career advisers to the OECD average of 57%. In Brazil and Costa Rica, fewer than 50% of students report that they had spoken with a career adviser either in or outside school. In all three countries, boys are marginally more likely than girls to report having spoken with an adviser (Figure 2.17). Differences in access to such provision related to socio-economic status (SES) are even more pronounced (Figure 2.18). Students from the lowest SES quartile in Brazil are 66% less likely than their most advantaged peers to have spoken to an adviser, compared to 14% in Panama and 33% in Costa Rica 33%. Notably, students across the OECD who do report speaking with a guidance counsellor are more than twice as likely to speak

to one within their school than outside it, whereas students in Brazil, Costa Rica and Panama are only slightly more likely to speak with an internal adviser than an external one.

Figure 2.18. Engagement with career advisers, by socio-economic status

Percentage of students reporting they have spoken with a career adviser by the age of 15



Note: Socio-economic status (SES) is defined using the PISA index of economic, social and cultural status (ESCS).
 Source: Authors' calculations using OECD (2019^[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Exploring potential futures in work

Influential theories of career development (Holland, 1959^[29]; Bandura, 1986^[30]; Super, 1975^[31]) consistently focus on the need for young people to learn more about themselves, the world of work and potential pathways into it if they are to optimise their transitions through education and ultimately into employment. Such exploration builds a sense of confidence in identifying and progressing towards ambitions that are stretching but also reflect their personal interests and abilities. Analysis of OECD PISA data show that teenage career thinking is heavily influenced by gender, socio-economic background and migrant status (Musset and Mytna Kurekova, 2018^[28]). Through reflective exercises, students can question their assumptions and expectations. As they learn more about themselves, they can become better placed to broaden their interests and form realistic and stable self-conceptions that will underpin their progression towards more successful and emotionally satisfying engagement with the labour market.

Engaging with employers and people in work within school guidance

During these processes of labour-market exploration, it is now widely agreed that career guidance provision can only be effective if it is enriched by the engagement of employers and people in work (Box 2.1) (Cedefop; ETF; EC, 2021^[32]; Musset and Mytna Kurekova, 2018^[28]).

Box 2.1. Employer engagement in career guidance

Employers and people in work often collaborate with schools to enrich their career guidance. They do so through such activities as work placements (or internships), career talks, jobs fairs, workplace visits, job shadowing, mentoring, interview practice, CV workshops and enterprise competitions. Studies of such engagements highlight how they present students with opportunities to gain information and experiences of value which can not easily be replicated in schools without such engagement (Mann, Stanley and Archer, 2014^[33]; Mann, Huddleston and Kashefpakdel, 2019^[34]). The value of the engagement stems from both the actual and perceived authenticity of the interactions. Interactions can enhance students' human capital (providing work-related experience of value to later employers), social capital (access to people who can help in transitions through providing advice, recommendations and potentially jobs) and cultural capital (enabling a confident and clear vision for progression) (Stanley and Mann, 2014^[35]; Mann, Rehill and Kashefpakdel, 2018^[36]; Jones, Mann and Morris, 2016^[37]; OECD, 2021^[38]).

A 2018 review of the international literature on employer engagement in guidance activities suggests that students can expect the diversity, intensity and their satisfaction with the activities to be enhanced (Mann, Rehill and Kashefpakdel, 2018^[36]).

- Diversity: where students undertake a range of different activities, they can be expected to have the opportunity to secure a wider range of potential benefits.
- Intensity: where students repeat activities (with different content), notably career talks, they are more likely to gain new and useful information.
- Satisfaction: where students (as teenagers) agree that guidance activities were useful to them, it is more likely that they consciously gained something of value to them.

Recent OECD analysis of longitudinal datasets in multiple countries identifies a range of development activities that can be linked with better employment outcomes (for example, wage premiums, typically of 5-10%) that can either only be delivered with the support of employers and people in work (career talks with guest speakers/job fairs, workplace visits, work placements, volunteering in the community) or are considerably enhanced through their participation (recruitment skills activities, occupationally-focused short programmes) (OECD, 2022^[39]). Models for enabling employers and people in work to engage with schools include the development of focused centres (such as the New Brunswick Centres for Excellence in Canada which enable connections between schools and high priority economic areas such as energy and health) and online resources (such as Inspiring the Future in the United Kingdom and New Zealand) which use online technology to connect school staff and employee volunteers directly (Government of New Brunswick, 2022^[40]; Education and Employers, n.d.^[41]).

One common way employers and people in work support the career guidance of young people in secondary education is by talking to them directly about their jobs, careers and workplaces. Career talks with guest speakers and job fairs are common activities designed to help students explore potential career options. Studies in the United Kingdom have explored the relationship between teenage participation in guidance activities that engage employers and employment outcomes in adulthood. For example, Kashefpakdel and Percy (2017^[42]) use longitudinal data to highlight substantial wage premiums at age 26 linked to teenage involvement in school-managed career talks at ages 14 to 16. Studies by Mann and colleagues (Mann and Percy, 2014^[43]; Percy and Mann, 2014^[44]; Mann et al., 2017^[45]) using cross-sectional data from surveys of 19-24 year-olds found significant relationships between more positive adult employment outcomes and the volume of (recalled) teenage engagement with employers through guidance activities.

Recent OECD analysis has identified positive associations between teenage participation in job fairs and career talks and better employment outcomes in Australia, Canada and Uruguay (Covacevich et al., 2021^[11]). In addition, longitudinal analysis of UK data (Kashefpakdel and Percy, 2017^[42]) identified positive outcomes linked to multiple (five or more) career talks undertaken at age 14-15. In Uruguay, students who had participated in career talks whilst at school by the age of 15 were less likely to be NEET 10 years later after having controlled for a range of background variables.

Career talks and job fairs aim to provide students with new and useful information relevant to their career visualisation and planning. This can be seen as a form of social capital, described by US sociologist Mark Granovetter in his influential study on the “strength of weak ties” as access to non-redundant, trusted information (Granovetter, 1973^[46]; Mann, Kashefpakdel and Percy, 2019^[47]; Raffo and Reeves, 2000^[48]). Through personal interactions, young people can engage with people who they are inclined to find trustworthy and who have access to knowledge and experiences of value. As each interaction is likely to provide access to information about different types of jobs and pathways into them, multiple interactions are more likely to generate access to new and useful information (Kashefpakdel and Percy, 2017^[42]). Surveys of experienced guidance practitioners highlight the importance of schools providing students with the opportunity to interact with people in work on numerous occasions, with their value enhanced where students perceive interactions to be relevant and feel authentic (Rehill, Kashefpakdel and Mann, 2017^[49]).

Box 2.2. Career talks at Colegio Legamar

Colegio Legamar in Madrid, Spain is a private, non-denominational educational institution that covers early childhood, primary, lower and upper secondary education (ages 1-18). Since 2017, the school has organised and hosted monthly career talks for students aged 15-18, highlighting occupations related to academic subjects studied within the Spanish Baccalaureat, an upper secondary academic qualification.

Each session lasts for an hour and a half, and features three volunteer professionals. Each volunteer is given 15 minutes to speak about their occupation. After all the volunteers have spoken, they engage in a 45-minute Q&A discussion with the students.

The volunteers are selected mostly (and preferably) from the school's alumni network of former students, but may also be drawn from other networks, including relatives of the students. Where possible, the volunteers defy gender stereotypes in their occupational choice. This includes female engineers, architects and police officers, as well as male early childhood teachers, nurses, pharmacists and tour guides. In addition, an effort is made to ensure that volunteers attended a range of different higher education and vocational institutions. This allows students to be exposed to and compare between the offerings of different institutions, including their operations, the type of scholarships they offer, and the agreements they have with companies.

OECD (n.d.^[50]), *Career Talks at Colegio Legamar*, www.oecd.org/education/career-readiness/examples-of-practice/collapsecontents/spain-career-talks.pdf.

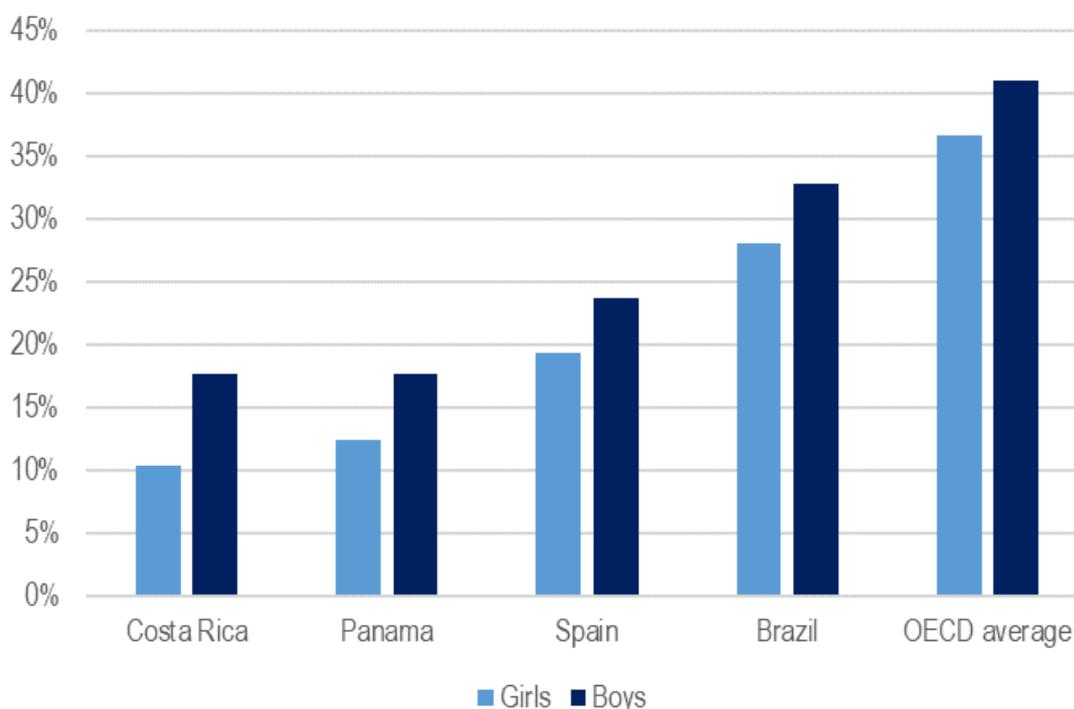
Students receive career information from employers and people in work through three common mechanisms: career talks (see Box 2.2 for an example), job fairs and career carousels. Of these, the third format – where guest speakers speak to small groups of students in turn – is likely to be most effective in helping students gain new and useful information. In a career talk with a guest speaker, students may adopt a passive role and disengage if they do not immediately see the relevance of the profession. Job fairs allow students to connect with a wide range of people from different work backgrounds but if they are not well managed, students may fail to engage due to a lack of confidence, peer pressure and pre-existing

assumptions. In a career carousel, guest speakers might speak with 5-6 small groups of students in the course of an hour. In such circumstances, it is harder for students to disengage and the structure ensures that they will have multiple opportunities to engage with people from different occupational backgrounds (Rehill, Kashefpakdel and Mann, 2017^[49]).

In PISA 2018, students from 32 countries were asked whether they had taken part in a job fair by age 15. Across participating OECD countries, around two in five students reported that they had (Mann, Denis and Percy, 2020^[7]). In the LAC countries with data available, participation rates were lower. Boys were more likely than girls to report participating in such an event. Participation rates in Costa Rica (where 10% of girls and 18% of boys reported attending a job fair) and in Panama (12% of girls and 18% of boys) are among the lowest recorded in the PISA survey (Figure 2.19).

Figure 2.19. Participation in job fairs, by gender

Percentage of students reporting they have attended by the age of 15



Source: Authors' calculations using OECD (2019^[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Further analysis of the data shows a particularly strong relationship between socio-economic status and the likelihood of participation in a job fair among LAC youth. In Brazil, 43% of students from the highest SES quartile have attended a job fair by the age of 15, more than twice the share as among their peers from the lowest quartile (19%). In Costa Rica, more advantaged students are 86% more likely to have participated in a job fair. In Panama, the figure is 41%.

Workplace visits and job shadowing

A further means of helping students gain new and useful information about their career plans is through programmes of workplace visits and/or job shadowing. In the former, groups of students visit workplaces to gain a general overview of an enterprise and its economic sector, to become familiar with workplace

cultures and to receive career information, often from multiple working professionals. Workplace visits typically last a few hours but may take a whole day. They can include group exercises, workshops, networking events, presentations, Q&A sessions and site tours (Buzzeo and Cifci, 2017^[51]; OECD, 2022^[52]). Job shadowing can be seen as a more focused and more intimate form of workplace visit. Typically involving a single student or a very small group, job shadowing enables young people to observe one or more professionals at work. It allows for a more focused insight into work roles that are commonly more closely linked to career aspirations than is the case with workplace visits (OECD, 2022^[52]). Job shadowing can also include programmes where parents bring their children with them to work for a day or half day (Box 2.3).

Box 2.3. Job shadowing days in Canada, Germany and the United States

A common way of enabling students, often aged around 14, to visit workplaces and to observe people in work is on annual days where parents are encouraged to bring their children with them to work. Participation in such days is especially widespread in Canada and the United States. Students typically visit a parent's workplace for a half day or full day to become more familiar with the jobs that their parents (and often their colleagues) do. The day is also used as an opportunity for children (particularly those whose parents are unable to facilitate a workplace visit) to engage in job shadowing in other workplaces.

Challenging gender stereotypes through job shadowing

In order to challenge barriers to more equal participation in the labour market by men and women, Germany has pioneered Girls' Days and Boys' Days. Every year, tens of thousands of students aged 10-18 spend a day in workplaces exploring professions where their gender is under-represented. The initiative is an opportunity for girls and boys to critically investigate the reality of what it would be to work in such an occupation. Such days are now held in many other countries, including Spain.

For both programmes, the beneficial effects are maximised through preparation and reflection in class.

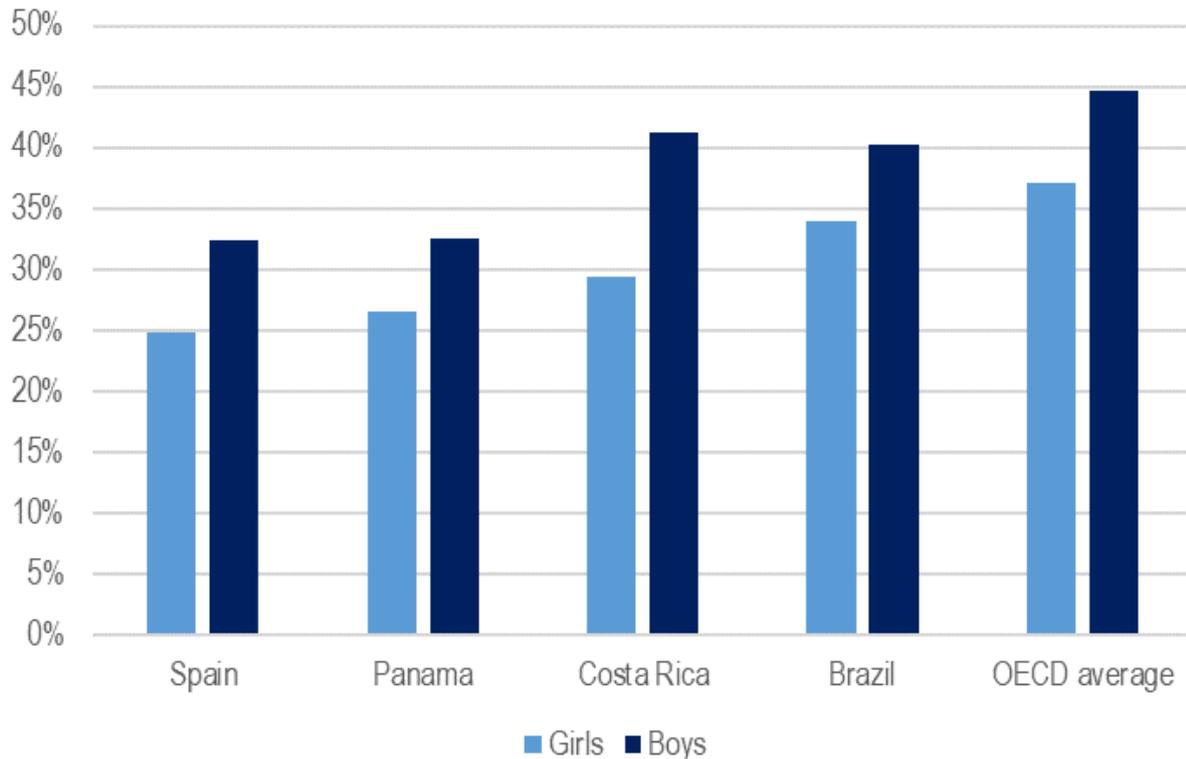
Sources: OECD (n.d.^[53]), *Canada: Take Our Kids to Work Day*, www.oecd.org/education/career-readiness/examples-of-practice/collapsecontents/canada-take-our-kids-to-work-day.pdf; Girls' Day (n.d.^[54]), *Future prospects for girls*, www.girls-day.de/fakten-zum-girls-day/das-ist-der-girls-day/ein-zukunftstag-fuer-maedchen/english; Boys' Day (n.d.^[55]), *Why offering a future day for boys?*, www.boys-day.de/footer/english-information. See also OECD (2022^[52]).

Historically, research literature on the long-term benefits of job shadowing and workplace visits has been very limited (OECD, 2022^[52]). OECD analysis of longitudinal data found positive relations between such activities and better employment outcomes in Australia, Canada, Korea and the United States (Covacevich et al., 2021^[11]). Across the OECD countries for which data are available, two in five students report having participated in a workplace visit or job shadowing by the age of 15 on average. In the three LAC countries for which data are available, participation levels were lower, but higher than in Spain. In general across all OECD countries, boys are more likely than girls to have participated in such careers activity and this pattern is also replicated in the three LAC countries (Figure 2.20).

As with job fairs, one striking divide in the PISA data on such participation relates to the socio-economic status of students. In OECD countries, the gaps between students in the highest and lowest SES quartiles are modest, but in the three LAC countries for which data are available, the differences are more substantial. In Brazil, high SES students are 80% more likely to report visiting a workplace than their low SES peers (47% compared to 26%). In Panama, more advantaged students are 47% more likely to have participated in the activity and in Costa Rica the figure is 25%.

Figure 2.20. Participation in job shadowing or workplace visits, by gender

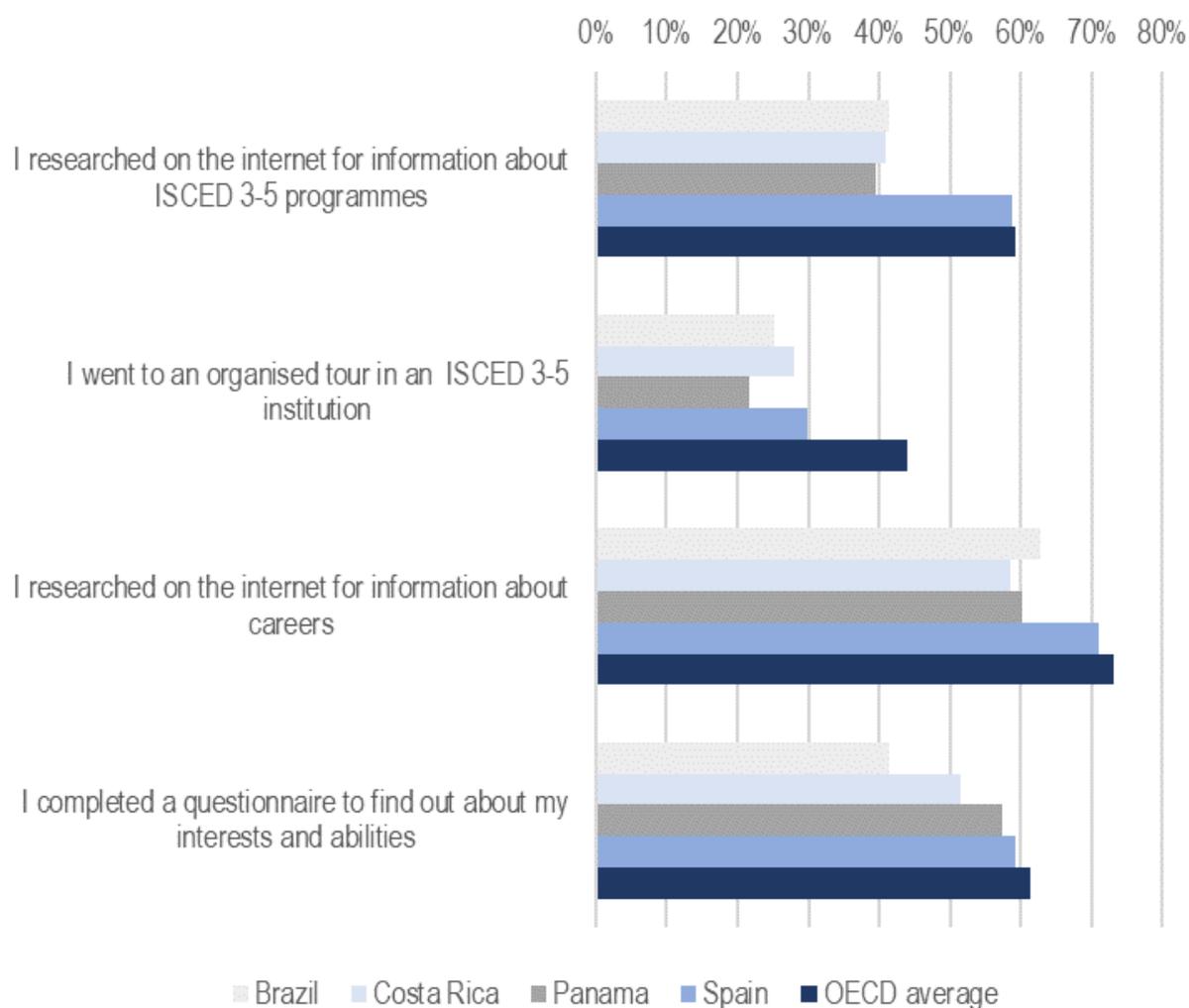
Percentage of students reporting they have participated by the age of 15



Source: Authors' calculations using OECD (2019_[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Schools also enable students to explore their potential career interests through various guidance activities. PISA 2018 includes questions on four common student activities: researching careers and continuing programmes of education on the Internet, taking part in an organised tour of a tertiary institution, and completing a questionnaire on career interests. As Figure 2.21 shows, young people in the three LAC countries for which data are available are less likely than their peers across the OECD or in Spain to have participated in any of these activities by the age of 15. Gender variations in participation in all four of these activities are modest but there are strong variations by SES in all three LAC countries. In Brazil, for example, students from the lowest SES quartile are 97% less likely to have completed a career questionnaire, 79% less likely to have visited a post-secondary educational institution, 67% less likely to have researched careers on the Internet and 111% less likely to have researched post-secondary educational programmes on the Internet than their more advantaged peers.

Figure 2.21. Career development activities among 15-year-old students



Source: Authors' calculations using OECD (2019^[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/. ISCED (International Standard Classification of Education) Levels 3-5 relate to upper secondary and tertiary education (OECD/Eurostat/UNESCO Institute for Statistics, 2015^[56]).

Experiencing potential futures in work

Schools have important roles to play in helping young people to explore the labour market and visualise potential futures in work (OECD, 2017^[23]; Mann, Denis and Percy, 2020^[7]). More effective career preparation also involves encouraging and enabling students to gain first-hand experiences of the working world while they are still in secondary education. European data show that young adults who experienced work either through internships or other forms of work-based learning managed by their schools, or through independent part-time working, are routinely more likely to be in employment than peers (Musset, 2019^[57]). These experiences might be managed through educational institutions (internships or work placements), through private endeavour (part-time jobs organised through private endeavours), or volunteering in the community managed via either schools or private endeavours. Such workplace engagement serves three primary purposes linked to the human, social and cultural capital accumulation of young people (Jones et al., 2019^[58]; Musset, 2019^[57]).

First, students can gain work-related experience and skills (human capital) of potentially significant value to future employers seeking reassurance that a young person will be a good fit for an entry-level position. By undertaking workplace tasks, teenagers can develop a range of potential skills, including technical skills (such as the use of workplace equipment) and soft or employability skills that relate to how a task is effectively completed. Teenagers are frequently presented with the opportunity to interact with other employees and customers, undertaking positions of responsibility which provide valuable learning opportunities. For example, analysis of PISA 2018 data shows that students who had worked part-time, volunteered or taken part in internships are significantly more likely to agree that they can adapt well to unfamiliar situations (Mann, Denis and Percy, 2020^[7]).

Second, their workplace engagements enable students to meet people who may be of help in their transition into full-time work (social capital). Employers are well placed to provide offers of full-time employment (after completion of secondary education), offer advice on continuing pathways in education and training, and supply references and recommendations to young people for jobs elsewhere.

Finally, their first-hand experiences introduce young people to distinctive work cultures (cultural capital). They can gain insight into subtle codes of personal presentation and behaviour that relate to different occupational areas and learn what potential recruiters most value in terms of qualifications and experience that they can further develop while they are still in education. They have opportunity to learn what researchers drawing on the work of French sociologist Pierre Bourdieu describe as the “rules of the game” as they consider different professions (OECD, 2021^[38]; Côté, 2002^[59]; Archer et al., 2012^[60]; Raffo and Reeves, 2000^[48]).

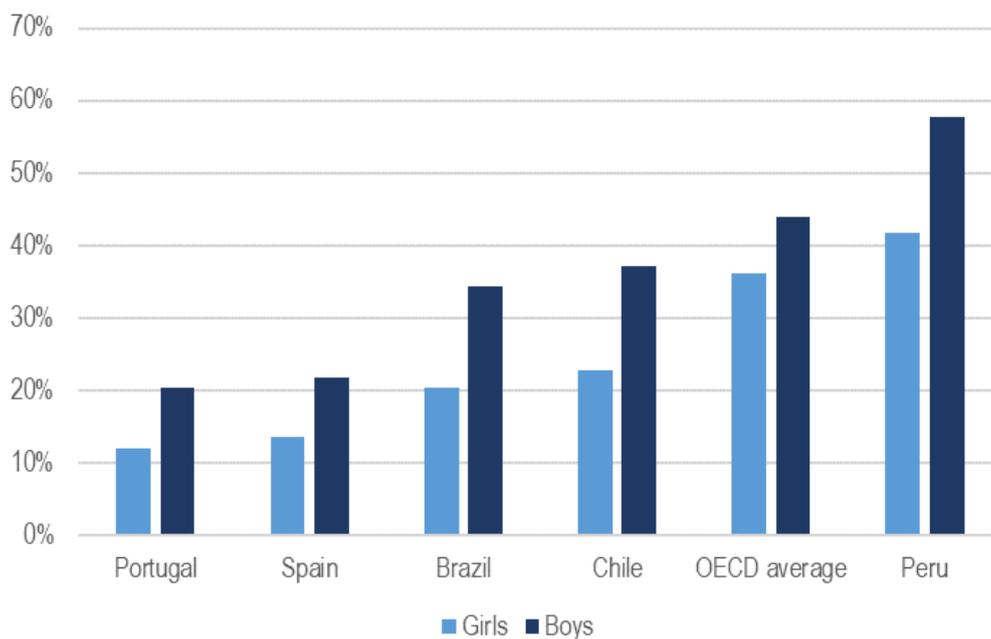
Part-time employment

Of the three means through which teenagers can secure first-hand work experiences, the strongest international evidence for better employment outcomes is in relation to part-time work. The great majority of the many longitudinal studies that have explored the relationship between teenage part-time work and better later employment outcomes have found evidence of a positive relationship (Covacevich et al., 2021^[1]; Mann, Denis and Percy, 2020^[7]). However, it should be noted that such studies relate to a small number of OECD countries.

PISA 2018 includes data on part-time teenage work from three LAC countries: Brazil, Chile and Peru (Figure 2.22 and Figure 2.23). In Brazil and Chile, around one-quarter of 15-year-olds reported working in a relatively formal job, compared to an OECD average of 40%. In Peru, around half of students said they worked. In all three countries, higher levels of participation in part-time working are strongly associated with gender, socio-economic status and geographic location: boys, and students from lower SES backgrounds or rural areas are more likely to combine employment with their full-time studies (OECD, 2021^[61]). This pattern of teenage working may suggest limits to the efficacy of part-time working in Latin America, where informal labour markets and high levels of inequality might be expected to increase the need for students to contribute financially to their household from a young age. Longitudinal analysis from OECD countries suggests that working excessive part-time hours (typically more than 10 hours a week) can be detrimental to the academic achievement of youth, counteracting the benefits gained from increased workplace experience (Mann, Denis and Percy, 2020^[7]). PISA includes no details on the duration of hours worked. In such circumstances, school-mediated opportunities to engage directly in the working world through volunteering and internships might be expected to offer more effective means of ensuring female participation and improving the quality of the experience, particularly if opportunities relate more closely to areas of personal career interest.

Figure 2.22. Part-time work among 15-year-old students, by gender

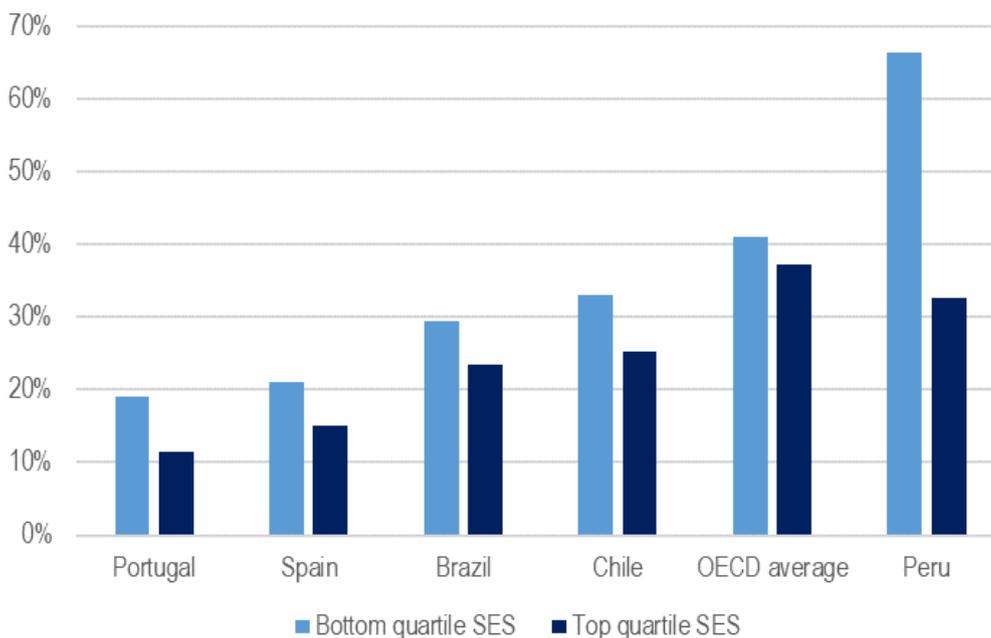
Percentage of students who earn money from working outside school hours



Source: Authors' calculations using OECD (2019_[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Figure 2.23. Part-time work among 15-year-old students, by socio-economic status

Percentage of students who earn money from working outside school hours



Note: Socio-economic status is defined using the PISA index of economic, social and cultural status (ESCS).

Source: Authors' calculations using OECD (2019_[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Volunteering

An alternative means of giving students the opportunity to gain first-hand experience of the working world is through volunteering in the community. When students undertake such roles, they often undertake tasks employees would normally be paid for and work alongside paid professionals. Volunteering is widely – but not always (Sikora and Green, 2020^[62]) – seen as a comparable mechanism for skills development to part-time work (National Youth Agency, 2008^[63]; Ockenden and Stuart, 2014^[64]; Walsh and Black, 2015^[65]; Sikora and Green, 2020^[62]). A series of studies over the last decade have identified statistically significant positive labour-market outcomes linked to teenage volunteering (Covacevich et al., 2021^[1]). In the United States, positive associations have been found between teenage volunteering and higher than anticipated earnings in adulthood, years of education, good mental health and life satisfaction (Chan, Ou and Reynolds, 2014^[66]; Ballard, Hoyt and Pachucki, 2018^[67]; Kim and Morgül, 2017^[68]). Using longitudinal data from Australia, Sikora and Green (2020^[62]) found a significant relationship between formal teenage volunteering outside of study time and adult occupational status, calculating the impact of teenage volunteering on enhanced occupational status to be one-quarter of the size of that of completing higher education (Mann, Denis and Percy, 2020^[7]).

One important study from the United States asked students whether they chose to volunteer or were required to do so by their school. The study provides a deeper control mechanism linked to psychological disposition. It might be expected that students who are more extraverted and confident would be more likely to choose to volunteer, particularly in the community. Such psychological characteristics might help explain better labour-market outcomes in young adulthood. However, Kim and Morgül (2017^[68]) found no difference in the character of later employment benefits linked to whether students chose, or were required, to volunteer. This suggests that it is the nature of the experience that can be expected to help students prepare for their ultimate transition into the labour market.

According to PISA 2018, teenage volunteering levels in Chile and Peru are comparable to the OECD average but they are substantially lower in Brazil. Girls seem to participate less frequently than boys (Figure 2.24). In Chile, they are 25% less likely to have volunteered by the age of 15. Young people from higher SES backgrounds are also more likely to have volunteered than students from the most socially disadvantaged quartile (Figure 2.25).

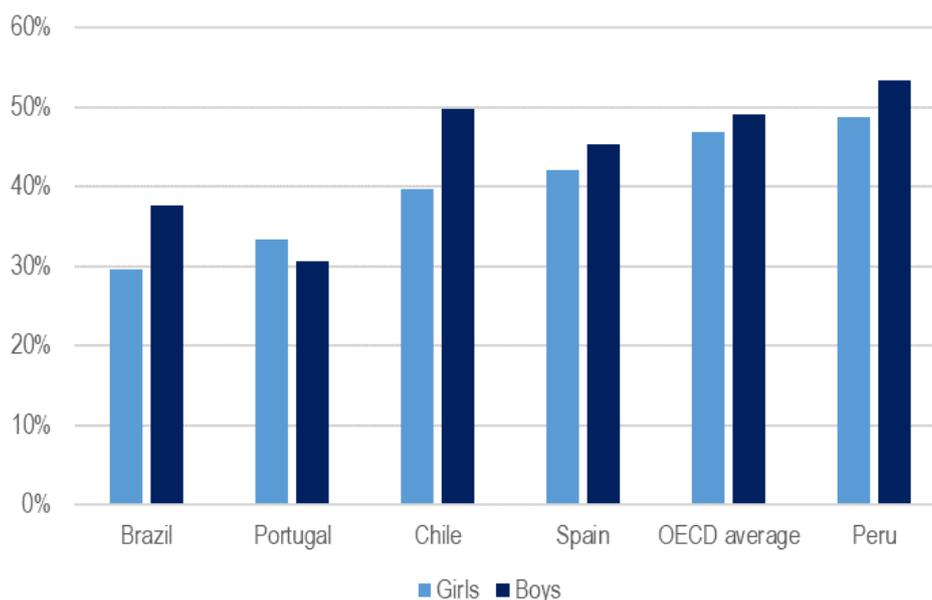
Internships

A third means through which students can gain first-hand experiences of the world of work is through work placements or internships, which involve going into a workplace and undertaking tasks that employees are normally paid to undertake. These commonly last 1-2 weeks for students in general education but longer for students in vocational programmes (Musset, 2019^[57]). While data from longitudinal studies are currently too limited to confirm whether work placements predict better adult employment outcomes internationally, a number of studies suggest that they can be valuable to students if delivered well (Covacevich et al., 2021^[1]; Mann, Denis and Percy, 2020^[7]).

In the three Latin American countries for which data are available, participation rates in internships are below the average for participating OECD countries (Figure 2.26). Typically, just one in five 15-year-olds in these countries have spent much time in an internship. The lack of participation among girls is particularly acute. In Brazil and Costa Rica, only 8% of girls have had such first-hand experiences of work through their school by the age of 15. In Panama, the proportion is 15%. Perhaps surprisingly, given the PISA data discussed above, participation rates vary relatively little by students' SES background, however.

Figure 2.24. Volunteering among 15-year-old students, by gender

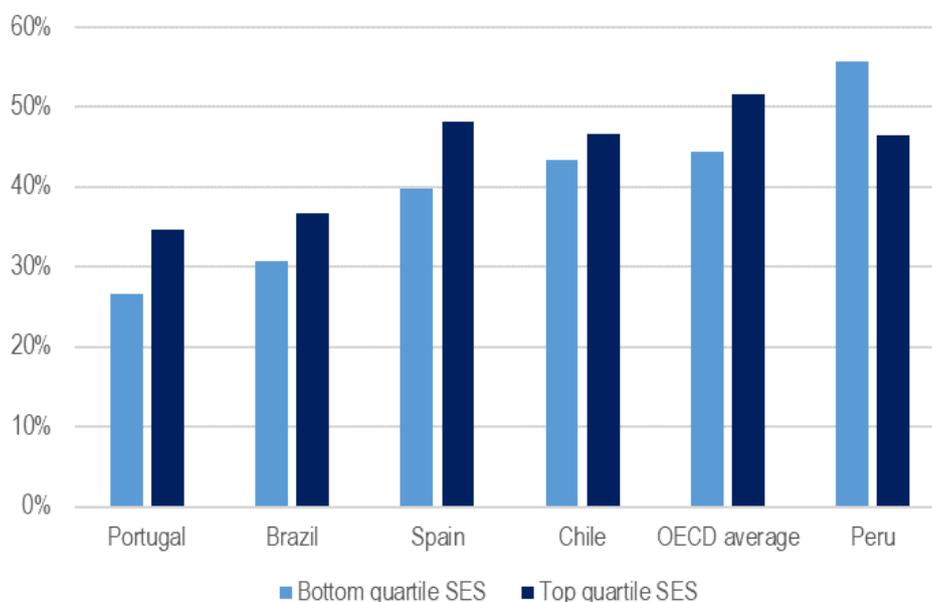
Percentage of students who participate in volunteering



Source: Authors' calculations using OECD (2019_[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Figure 2.25. Volunteering among 15-year-old students, by socio-economic status

Percentage of students who participate in volunteering

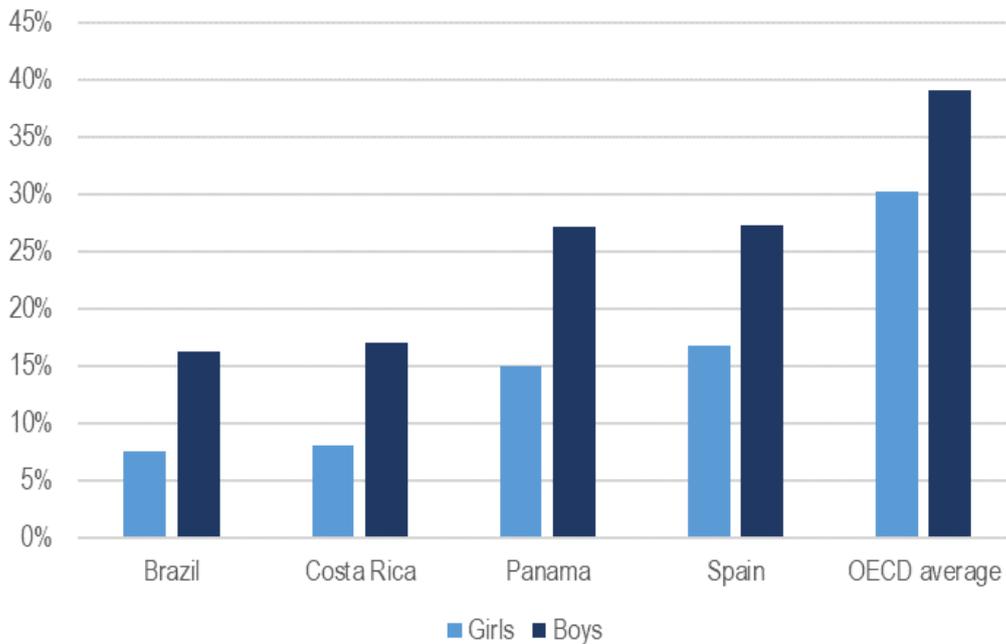


Note: Socio-economic status is defined using the PISA index of economic, social, and cultural status (ESCS).

Source: Authors' calculations using OECD (2019_[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

Figure 2.26. Participation in internships, by gender

Percentage of students reporting they have participated in a work placement or internship by the age of 15



Source: Authors' calculations using OECD (2019_[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

An important advantage of school-managed work placements is the opportunity for a short internship to be undertaken within an occupational area of interest. Unfortunately, this is often not the case even in countries where high proportions of young people undertake work placements (Fullarton, 1999_[69]). Careful planning and reflection are required to ensure that young people gain value from their internships, as long-term benefits cannot be taken for granted (Jones et al., 2019_[58]). Moreover, risks of social reproduction, entrenching inequity, arise when students are asked to find their own placement (Le Gallais and Hatcher, 2014_[70]) particularly where they are expected to make use of family-based social networks. Schools can mitigate risks by ensuring guidance counsellors work closely with students to identify work placements following periods of extended career exploration (Le Gallais and Hatcher, 2014_[70]). Students need an informed understanding of their career interests to secure the maximum benefit, so effective systems need to provide young people with plentiful opportunities to explore their own interests before undertaking an internship (Mann, Denis and Percy, 2020_[7]; Turner, 2020_[71]). In New Zealand, for example, some schools adopt a model of growing and deepening engagement in the world of work (OECD, n.d._[72]). At ages 10 to 14, students engage in activities such as career talks and workplace visits to become familiar with the working world prior to periods of more intense exploration, including job shadowing. These lead in turn to first-hand experiences of work through internships and direct interactions with employers, primarily around ages 16-18. In both New Zealand and some Canadian provinces, students can earn credits from their work placements that contribute towards their final graduation (Musset, 2019_[57]).

The development of personal agency through career guidance

As PISA 2018 reveals, in Latin America and the Caribbean as elsewhere in the world, young people do not lack aspiration (Mann et al., 2020^[19]). However, young people vary considerably in how much access they have to resources which will allow them to make informed and confident decisions, gain a realistic appreciation of the efforts required to achieve their aspirations, and secure the experience that will enable them to make progress with their ambitions (Archer, 2014^[73]; Blustein, 2019^[74]; Bok, 2010^[75]; Gardiner and Goedhuys, 2020^[76]; Smith, 2011^[77]).

Indian sociologist Arjun Appadurai considers aspiration as a personalised cultural resource developed within a specific social context (Appadurai, 2004^[78]; Hart, 2016^[79]). Developed within studies of social mobility in low-income countries, where it is particularly influential (Bernard et al., 2014^[80]; Chiapa, 2012^[81]; Gardiner and Goedhuys, 2020^[76]), this approach conceives career aspirations to be a consequence, rather than a cause, of poverty and inequality (Dalton, Ghosal and Mani, 2016^[82]). The concept draws on social capital theory which highlights the importance of social relationships in enabling access to economic opportunities (Granovetter, 1995^[83]) and bears a close relation to the idea of critical consciousness defined by Blustein (2019^[74]) as the capacity to reflect on, and the commitment to address, the causes of social inequality. As Heberle (2020^[84]) notes in a recent review of US academic literature, positive relationships have been found in a series of cross-sectional and longitudinal quantitative studies between critical beliefs and actions related to social inequality and injustice, and better than expected career-related attitudes and outcomes, including earnings at age 26 (Diemer, 2008^[85]). In essence, the better young people understand the reality of the labour market and how it operates, the better placed they are to reach better outcomes. With the support of their schools, families and others, they can develop and deploy a stronger sense of personal agency, guiding a smoother transition into the career they want.

Several aspects of teenage students' attitudes towards their future careers are associated with lower unemployment, higher wages and greater job satisfaction in international longitudinal data. These include greater career certainty, career ambition (expecting to work in an ISCO group 1 or 2 job), career alignment (expecting to attain the typical level of education needed to start their expected occupation) and instrumental motivation (confidence that secondary schooling will help them in their search for desirable employment) (Covacevich et al., 2021^[16]; Covacevich et al., 2021^[1]). Having clear and ambitious visions for the future, informed by understanding of how education can help achieve those goals, speaks to students' personal agency. Analysis of data from PISA 2018, controlling for gender, socio-economic status and reading scores, found statistically significant relationships across all OECD countries with data available between the more beneficial forms of career thinking and engagement with a range of guidance activities (Covacevich et al., 2021^[1]). A similar picture is found in the LAC countries for which data are available, albeit to a lesser extent. This suggests that guidance provision in LAC countries tends to be less effective than is the case across OECD countries.

Conclusion

As discussed above, PISA 2018 data suggest that many young people in LAC countries, particularly girls and those from more disadvantaged social backgrounds, could benefit from greater access to career-related exploration and experiences to enhance their career thinking. This chapter highlights three primary challenges for LAC countries: engaging students with employers and people in work; enhancing guidance programmes to enable a culture of continued critical reflection; and prioritising the needs of the most disadvantaged, including girls and students from low SES backgrounds.

Young people entering the labour market need to draw on their first-hand experiences of work, social networks and cultural familiarity to create the human, social and cultural capital that can help them make an effective transition to the world of work. In education systems, such preparation is delivered through career guidance programmes. Unfortunately, in many LAC countries, schools do not provide career

guidance or it is not a compulsory part of the curriculum. Students are less likely to participate in those areas of career guidance most strongly linked with better outcomes than their peers across the OECD, including in Portugal and Spain. Only a small minority have attended job fairs and career talks, or workplace visits, including job shadowing. This is particularly important because LAC students also typically experience lower levels of part-time working, volunteering or school-managed work placements than is the norm across OECD countries.

Employer engagement plays an essential role in ensuring the efficacy of career guidance. By connecting directly with people in work, young people have the opportunity to secure new and trustworthy information about the labour market, develop useful social contacts and gain valuable insights into distinctive work cultures. Looking across the available data for LAC countries, the priority should be to deliver coherent career guidance programmes that are strongly enriched by first-hand contact with employers and people in work. Effective guidance programmes enable young people to visualise and plan their futures, creating a sense of personal agency that allows them to reap the greatest benefit from increasing years of education and training. A culture of critical reflection, through discussion and use of resources such as psychometric testing and reflection on labour-market encounters, will help students develop career aspirations that are both ambitious and pragmatic.

Box 2.4. Bringing learning to life in secondary education

There are many international examples of approaches to bring elements of work-related learning into the classroom in order to create a culture of critical career investigation. In some French schools, for example, students are tasked with researching careers related to a topic of study in their science projects, investigating working conditions, salaries and typical entry requirements (OECD, n.d.^[86]). In Australia, programmes encourage students to research professions based on their own interests and then relate them to subjects of study (OECD, n.d.^[87]). In the United States, some schools use psychometric testing to develop students' understanding of their personal preferences. They are then helped to see how different jobs value different psychological dispositions and how they relate to academic provision (OECD, n.d.^[88]). In Australia, Canada and the United States, many schools offer occupationally-focused short programmes that help students to explore and prepare for potential careers in vocational areas such as healthcare, manufacturing and information technology (Covacevich et al., 2021^[1]). Offered alongside general education, such programmes are often available to students aged 16-18 over 1-2 days a week and are typically rich in work-related and work-based learning. Longitudinal analysis shows that participation can commonly be related to better labour-market outcomes (Covacevich et al., 2021^[1]).

There are strong patterns in the LAC data showing how gender and SES shape students' career preparation. For example, girls are consistently less likely than boys to have had the opportunity to gain work experience while still in school. Students from less advantaged backgrounds frequently demonstrate career thinking associated with poorer employment outcomes than would be expected given educational performance. They are also less likely to participate in the most effective career guidance activities. This is especially concerning for students who are not expected to pursue tertiary education but go straight into the labour market after leaving school. Consequently, patterns of systemic disadvantage linked to gender and SES should be priorities for educational reform programmes to address (OECD, 2021^[89]; Covacevich et al., 2021^[1]).

Box 2.5. Gatsby Benchmarks

The Gatsby Benchmarks were developed by the Gatsby Foundation in 2013 and were introduced as a requirement of English schools serving young people aged 12-18 in 2018 (Department for Education, 2021^[90]; Gatsby Charitable Foundation, 2018^[91]). They describe eight core attributes of career guidance based on the international research which was then available and have since attracted considerable interest as a model for structuring career guidance at secondary schools.

1. **A stable careers programme.** Every school and college should have an embedded programme of career education and guidance that is known and understood by students, parents, teachers, governors/trustees, employers and other agencies.
2. **Learning from career and labour market information.** Every student, and their parents (where appropriate), should have access to good quality information about future study options and labour-market opportunities. They will need the support of an informed adviser to make the best use of available information.
3. **Addressing the needs of each pupil.** Young people have different career guidance needs at different stages. Opportunities for advice and support need to be tailored to the needs of each pupil. A school's or college's careers programme should embed equality and diversity considerations throughout.
4. **Linking curriculum learning to careers.** All subject staff should link the curriculum with careers, even on courses that are not specifically occupation-led. For example, science, technology, engineering and mathematics (STEM) subject staff should highlight the relevance of STEM subjects for a wide range of career paths. Study programmes should also reflect the importance of numeracy and literacy as a key expectation from employers.
5. **Encounters with employers and employees.** Every student should have multiple opportunities to learn from employers about work, employment and the skills that are valued in the workplace. This can be through a range of enrichment activities including visiting speakers, mentoring and enterprise schemes, and should include students' own part-time employment where it exists.
6. **Experiences of workplaces.** Every student should have first-hand experiences of the workplace through work visits, job shadowing or work placements to help their exploration of career opportunities and expand their networks.
7. **Encounters with further and higher education.** All students should understand the full range of learning opportunities that are available to them. This includes both technical and academic routes and learning in schools, colleges, universities and in the workplace.
8. **Personal guidance.** Every student should have opportunities for guidance interviews with a career adviser, who could be internal (a member of school staff) or external, provided they are trained to an appropriate level. These should be available for all students whenever significant study or career choices are being made. They should be expected for all students but should be timed to meet their individual needs.

Education systems in Latin America and the Caribbean would benefit from expanding the provision of career guidance activities that enable all students to explore and experience potential futures in the labour market, enabling and encouraging them to continue to reflect on their future ambitions. Over recent years, countries around the world have enhanced guidance provisions in recognition that growing levels of academic achievement have often failed to systematically improve the competitiveness of young people in the search for attractive employment (Cedefop; ETF; EC, 2021^[32]). At an institutional level, schools are

finding ways of integrating guidance provision into the wider curriculum (Box 2.4). One influential policy model for articulating what is expected of educational institutions is the Gatsby Benchmarks which set clear expectations of all secondary schools (Box 2.5). Policy makers can also ask questions of schools based on the most recent analysis of international longitudinal research (OECD, 2021^[92]). Effective provision regularly asks students about their occupational and educational ambitions, encouraging and enabling them to reflect on their responses, and the related academic requirements, with guidance counsellors. As they leave secondary school, young people should be helped to develop transition plans that will enable them to reach their ambitions.

For governments, the longitudinal data have provided a substantial new rationale for ensuring the provision of high-quality guidance. The evidence is that teenagers who explore, experience and think about their potential future careers commonly experience lower rates of youth unemployment and higher wages in adulthood, addressing the need for a more efficient distribution of skills within an economy. Consequently, career guidance can be seen as a low-cost preventative measure with high confidence in long-term returns on investment.

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Annex 2.A. Top ten occupations cited by girls and boys, PISA 2018

Annex Table 2.A.1. Top ten occupations cited by girls and boys, PISA 2018

Country	Top 10 for girls (%)			Top 10 for boys (%)		
Argentina	1	Doctors	13.8	1	Sportspeople	11.7
	2	Teachers	12.7	2	Police officers	8.5
	3	Lawyers	11	3	Engineers	7.1
	4	Psychologists	6.6	4	Lawyers	6.2
	5	Police officers	6.3	5	Doctors	5.5
	6	Veterinarians	3.9	6	Accountants	5.4
	7	Accountants	3.5	7	Commissioned armed forces officers	5.3
	8	Architects	3.4	8	Architects	4.5
	9	Sportspeople	3.3	9	Teachers	3.7
	10	Commissioned armed forces officers	2.6	10	Motor vehicle mechanics and repairers	2.6
		Total		67	Total	
Brazil	1	Doctors	23	1	Engineers	15.7
	2	Lawyers	8.4	2	Sportspeople	10.2
	3	Veterinarians	7.8	3	Police officers	8.3
	4	Psychologists	6.4	4	Doctors	8.2
	5	Police officers	5.2	5	Lawyers	5.6
	6	Teachers	4.2	6	Administration professionals	4
	7	Engineers	3.8	7	Veterinarians	3.6
	8	Police inspectors and detectives	3.1	8	ICT professionals	3.6
	9	Nursing and midwives	3	9	Science and engineering associate professionals	3.2
	10	Architects	2.9	10	Teachers	3.2
		Total		67.6	Total	
Chile	1	Doctors	17	1	Engineers	16.8
	2	Teachers	8.5	2	Doctors	8.2
	3	Nursing and midwives	6.2	3	Sportspeople	4.9
	4	Engineers	6.1	4	Armed forces occupations, other ranks	4.6
	5	Police inspectors and detectives	5.6	5	Machinery mechanics and repairers	4
	6	Psychologists	5.5	6	Police inspectors and detectives	3.7
	7	Lawyers	4.9	7	Lawyers	3.7
	8	Dentists	3.1	8	Motor vehicle mechanics and repairers	2.6
	9	Veterinarians	3	9	Architects	2.6
	10	Chefs	2.6	10	Managing directors and chief executives	2.4
		Total		62.6	Total	
Colombia	1	Doctors	21.3	1	Engineers	17.1
	2	Psychologists	6.7	2	Sportspeople	9.1
	3	Engineers	5.8	3	Doctors	8.3
	4	Managing directors and chief executives	5.2	4	Managing directors and chief executives	7.2
	5	Lawyers	5.1	5	ICT professionals	6.4
	6	Teachers	4.9	6	Lawyers	3.9
	7	Veterinarians	3.6	7	Architects	3.9
	8	Police officers	3.1	8	Teachers	3.8
	9	Designers	2.7	9	Management and organization analysts	2.6
	10	Nursing and midwives	2.5	10	Police officers	2.3
		Total		60.7	Total	

Country	Top 10 for girls (%)			Top 10 for boys (%)		
Costa Rica	1	Doctors	26.9	1	Doctors	11.9
	2	Lawyers	5.6	2	Engineers	11.7
	3	Engineers	5.4	3	ICT professionals	7.2
	4	Business managers	5	4	Business managers	7
	5	Teachers	4.9	5	Teachers	5
	6	Veterinarians	4.4	6	Architects	4.6
	7	Sociologists, anthropologists and related professionals	3.8	7	Electronics engineers	3.8
	8	Psychologists	3.6	8	Sportspeople	3.4
	9	Architects	3.6	9	Accountants	3.2
	10	Biologists, botanists, zoologists and related professionals	3.2	10	Police officers	3.1
		Total	66.3		Total	61
Dominican Republic	1	Doctors	24.6	1	Engineers	25.1
	2	Teachers	9.8	2	Architects	8.7
	3	Engineers	9.5	3	Doctors	7.4
	4	Psychologists	6.4	4	Teachers	7.3
	5	Lawyers	6.3	5	Telecommunications engineers	7.3
	6	Architects	5.6	6	Sportspeople	6
	7	Business managers	5.1	7	Lawyers	3.2
	8	Dentists	2.4	8	Business managers	2.7
	9	Meteorologists	2.4	9	ICT professionals	2.2
	10	Designers	2.2	10	Accountants	2.2
		Total	74.2		Total	72
Mexico	1	Doctors	17.4	1	Engineers	17.3
	2	Teachers	7.6	2	Doctors	9.5
	3	Lawyers	6	3	Architects	5.3
	4	Psychologists	5	4	ICT professionals	4.9
	5	Professionals	4.8	5	Non-commissioned armed forces officers	4.1
	6	Engineers	4.5	6	Teachers	3.9
	7	Nursing and midwives	4.1	7	Lawyers	3.1
	8	Personnel and careers professionals	3.5	8	Services managers not elsewhere classified	3.1
	9	Legal professionals not elsewhere classified	3.3	9	Accountants	2.9
	10	Architects	3.2	10	Sportspeople	2.7
		Total	59.2		Total	56.7
Panama	1	Science and engineering professionals	9.3	1	Science and engineering professionals	17.1
	2	Health professionals	7.4	2	Police officers	6.1
	3	Teachers	6.4	3	Teachers	5.8
	4	Doctors	5.3	4	Aircraft pilots and related associate professionals	5.1
	5	Traditional and complementary medicine professionals	5.1	5	Architects	5
	6	Business and administration professionals	4.7	6	Health professionals	4.7
	7	Lawyers	3.8	7	Business and administration professionals	3.6
	8	Aircraft pilots and related associate professionals	3.5	8	Lawyers	3.1
	9	Police officers	3.5	9	Doctors	3
	10	Police inspectors and detectives	3.4	10	Accountants	2.9
		Total	52.6		Total	56.4

Country	Top 10 for girls (%)			Top 10 for boys (%)		
Peru	1	Doctors	12.9	1	Engineers	21.3
	2	Lawyers	8.3	2	Police officers	7.7
	3	Management and organization analysts	8.3	3	ICT professionals	7.5
	4	Engineers	7.7	4	Doctors	6.5
	5	Psychologists	7.3	5	Lawyers	4.9
	6	Nursing and midwives	5.7	6	Architects	4.5
	7	Police officers	5.7	7	Management and organization analysts	4.1
	8	Architects	5	8	Commissioned armed forces officers	4
	9	Business services agents not elsewhere classified	4.5	9	Motor vehicle mechanics and repairers	3.9
	10	Accountants	3.8	10	Business services agents not elsewhere classified	3.6
		Total	69.1		Total	67.9
Uruguay	1	Doctors	18.1	1	Sportspeople	13.5
	2	Teachers	10.4	2	Engineers	8.5
	3	Psychologists	8.9	3	Doctors	7.2
	4	Lawyers	6.3	4	Motor vehicle mechanics and repairers	5.6
	5	Veterinarians	4.4	5	Armed forces occupations, other ranks	5
	6	Police officers	3.9	6	Police officers	4.1
	7	Accountants	3.8	7	Accountants	4
	8	Architects	3.8	8	Architects	3.5
	9	Hairdressers	3	9	Lawyers	3.4
	10	Sportspeople	2.9	10	Teachers	3.2
		Total	65.3		Total	58
Portugal	1	Doctors	12.5	1	Engineers	15.5
	2	Psychologists	7.3	2	Sportspeople	11.8
	3	Lawyers	6.9	3	ICT professionals	6.3
	4	Managing directors and chief executives	5.5	4	Managing directors and chief executives	4.7
	5	Teachers	4.8	5	Motor vehicle mechanics and repairers	4.6
	6	Designers	4.1	6	Doctors	3.8
	7	Veterinarians	3.9	7	Information and communications technology operations and user support technicians	3.8
	8	Actors	3.4	8	Designers	2.7
	9	Physiotherapists	2.7	9	Police officers	2.6
	10	Engineers	2.7	10	Armed forces occupations, other ranks	2.3
		Total	53.8		Total	58.1
Spain	1	Teachers	17.2	1	ICT professionals	9.5
	2	Doctors	10	2	Police officers	7.3
	3	Psychologists	6.4	3	Engineers	7.3
	4	Lawyers	4.5	4	Teachers	7.1
	5	Nursing and midwives	3.8	5	Motor vehicle mechanics and repairers	4.5
	6	Police officers	3.6	6	Doctors	3.9
	7	Writers	3	7	Sportspeople	3.7
	8	Designers	2.9	8	Fire-fighters	2.3
	9	Legal professionals not elsewhere classified	2.4	9	Writers	2
	10	Veterinarians	2.3	10	Designers	1.9
		Total	56.2		Total	49.4

Source: OECD (2019_[17]), *PISA 2018 Database*, www.oecd.org/pisa/data/2018database/.

3 Skills, gender and family configuration in Latin America

School enrolment and educational attainment have increased substantially across the Latin America region, closing earlier gaps between boys and girls. Results from PISA find girls outperform boys in reading skills across all socio-economic groups. However, their better performance does not translate into better labour-market outcomes than their male peers. Latin American women have, on average, substantially less favourable labour-market outcomes and earnings than OECD women. Parental expectations and occupational choices condition women's labour-market choices, earnings and opportunities for increasing skills in the workplace in Latin America. Early cohabitation (whether in marriage or not) and adolescent parenting are more prevalent among young women than young men in the region, placing them on a lower earnings trajectory that can lead to a lifetime disadvantage that cascades down to the next generation of girls.

Introduction

This chapter analyses gender gaps in skills acquisition and proficiency. It is underpinned by a broad literature review covering gender gaps in education and reading and numeracy skills, the influence of family background on educational and major life outcomes, and the various gaps that emerge and widen over men and women's working lives. The analysis also explores the effects of family configurations on skills accumulation, growth and labour-market outcomes. It examines gender differences in skills proficiency over the life cycle, the role of family background in acquiring skills, and how the relationship between skills and timing of new family formation determines social and economic outcomes for women and men. It shines a light on the challenges and opportunities to improve labour-market outcomes in Latin America. It focuses primarily on a descriptive analysis of different types of cross-sectional skills survey data to identify gaps and patterns. It applies some regression analyses to look at correlations between skills formation and proficiency with pivotal labour-market and life outcomes.

The chapter relies on data from the Programme of International Student Assessment (PISA), an international assessment that measures the reading, mathematics and science literacy of 15-year-olds every three years. PISA also contains key additional information about students' socio-economic and cultural status, and parental attitudes. Since its start in 2000, it has incorporated 10 Latin American countries. The chapter also uses data from the first cycle of the Programme for the International Assessment of Adult Competencies (PIAAC), which collects information on the level and distribution of skills in adult populations, as well as the extent of skills use in different contexts. Data are available for OECD countries and partner economies, including four Latin American countries. Finally, the adult skills data are supplemented with data from the World Bank Skills Towards Employability and Productivity (STEP) Skills Measurement Program, which also measured the distribution of literacy skills in adult populations in urban areas in several developing economies, including Bolivia and Colombia in Latin America. Although the STEP surveys measure literacy on the same scale as PIAAC, allowing for a degree of comparability, the two cannot be considered entirely interchangeable (see Chapter 4 for more details). Annex Table 3.A.1 lists the countries covered by each dataset.

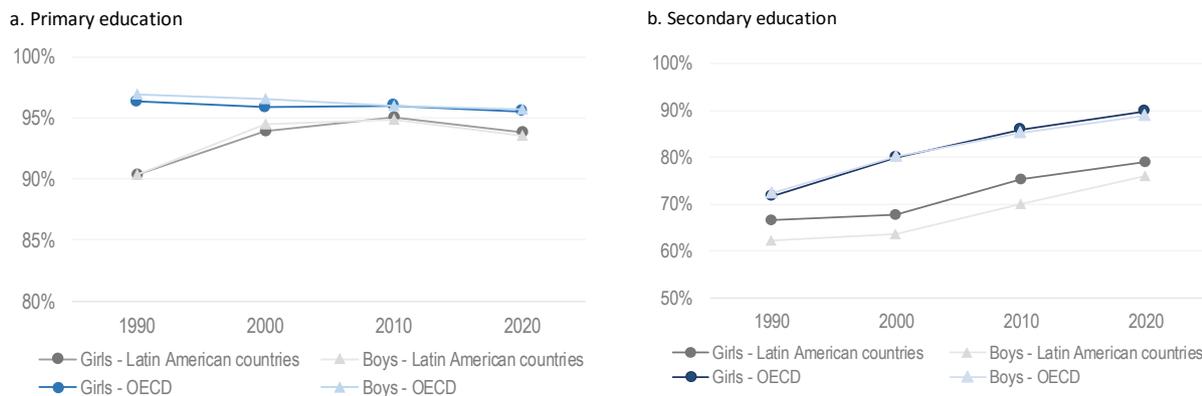
Gender differences in skills over the life cycle

Human capital is a key determinant of success in the labour market. People can accumulate human capital through two main channels: first, through education or formal schooling, and second, at work, through on-the-job or off-the-job training. This section examines gender differences in reading skills during childhood and adulthood, as well as gender gaps in labour-market outcomes in Latin America.

Gender gaps in reading skills during childhood

During the past 30 years, all countries in Latin America and the Caribbean have experienced a sharp increase in the number of boys and girls enrolled in primary and secondary education. Gender gaps in primary education have effectively been closed, and girls outnumber boys in secondary education. However, the region is still far below the average secondary enrolment rates observed in OECD countries (Figure 3.1).¹

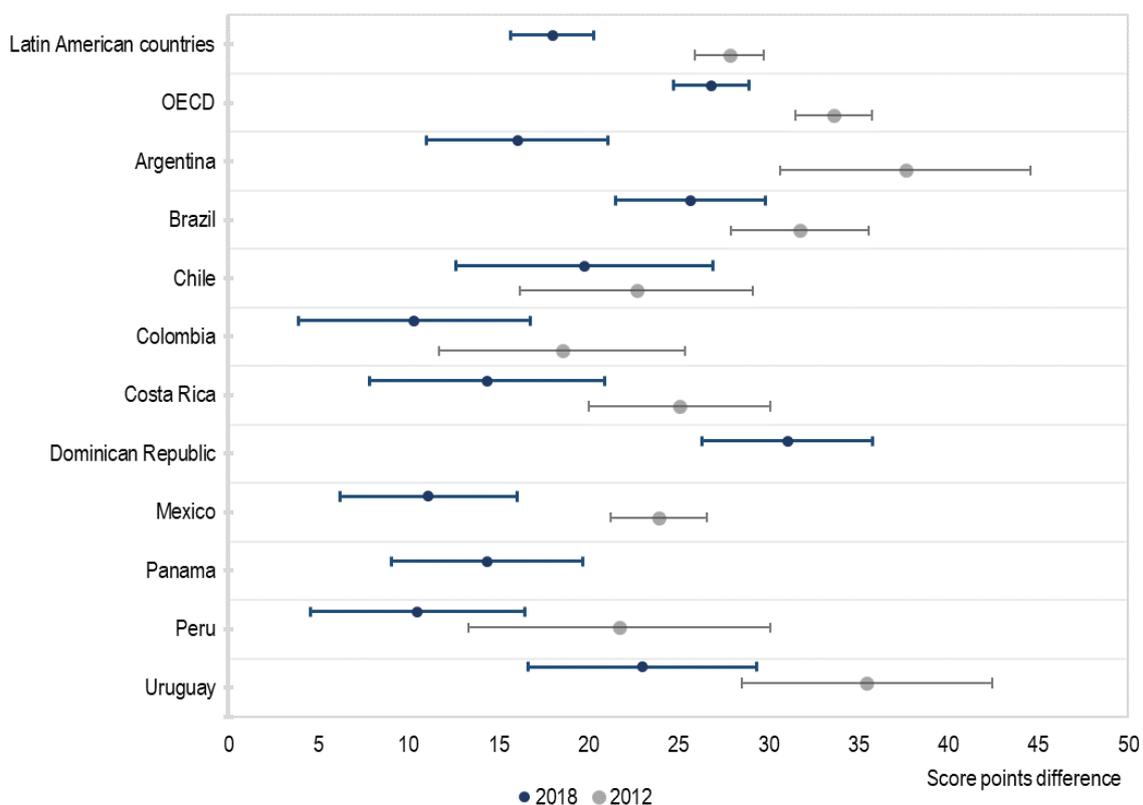
Figure 3.1. Trends in school enrolment 1990-2020, by gender



Note: The net enrolment rate for a level of education (primary, secondary) is the ratio of the number of children of the official age for that level who are enrolled in that level to the total population of children of the official age for that level. The figure provides simple averages for all countries in Latin America, excluding high-income countries. OECD statistics exclude Latin American member countries.

Source: World Bank (n.d.^[1]), School enrolment, primary (% net) and School enrolment, secondary (% net), *World Development Indicators*, <https://databank.worldbank.org/source/world-development-indicators>.

Figure 3.2. The literacy gender gap, 2012 and 2018



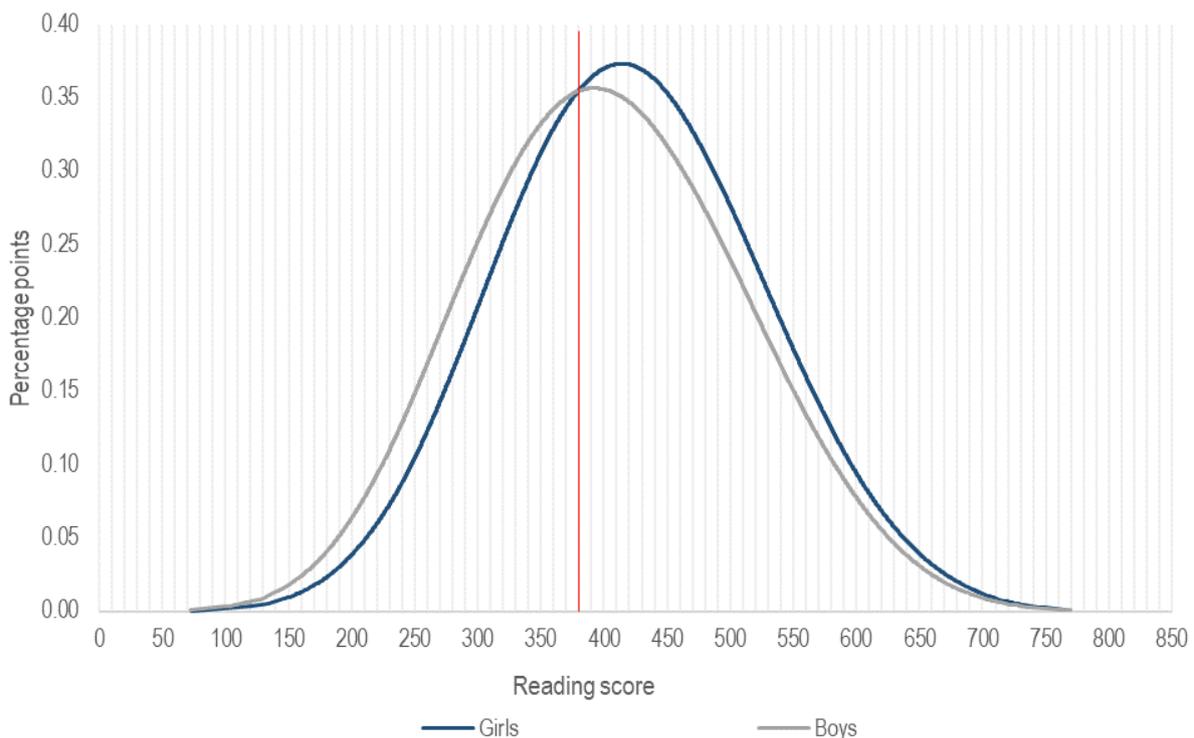
Note: The gender gap is calculated as the average score of girls minus the average score of boys. The bands represent the standard errors of the estimates. The Dominican Republic and Panama did not participate in PISA 2012.

Sources: Authors' calculations using OECD (2013^[2]), *PISA 2012 Database*, <https://www.oecd.org/pisa/data/pisa2012database-downloadabledata.htm> and OECD (2019^[3]), *PISA 2018 Database*, <https://www.oecd.org/pisa/data/2018database/>.

A comparison of PISA results between 2012 and 2018 shows that the gender gap in literacy skills has narrowed, although girls still outperform boys by an average of 18 points (Figure 3.2).² In most Latin American countries, this narrowing of the gap in may be due to a combination of a decline in the average performance of girls and a minor improvement in the average performance of boys (OECD, 2019^[4]). Among OECD countries, the narrowing seems to reflect a decline in girls' average performance in reading.

Variation in performance distribution suggests that gender differences in literacy proficiency at the extreme ends are often more substantial than they are at the mean. In PISA 2018, the reading performance of boys has a larger standard deviation and a lower mean, which suggests that boys are more likely to score towards the bottom of the performance scale. Latin American boys tend to be over-represented among students who scored below 350 score points in literacy proficiency, while girls are more likely than boys to attain the highest scores (Figure 3.3).

Figure 3.3. Distribution of literacy proficiency scores in Latin America, by gender

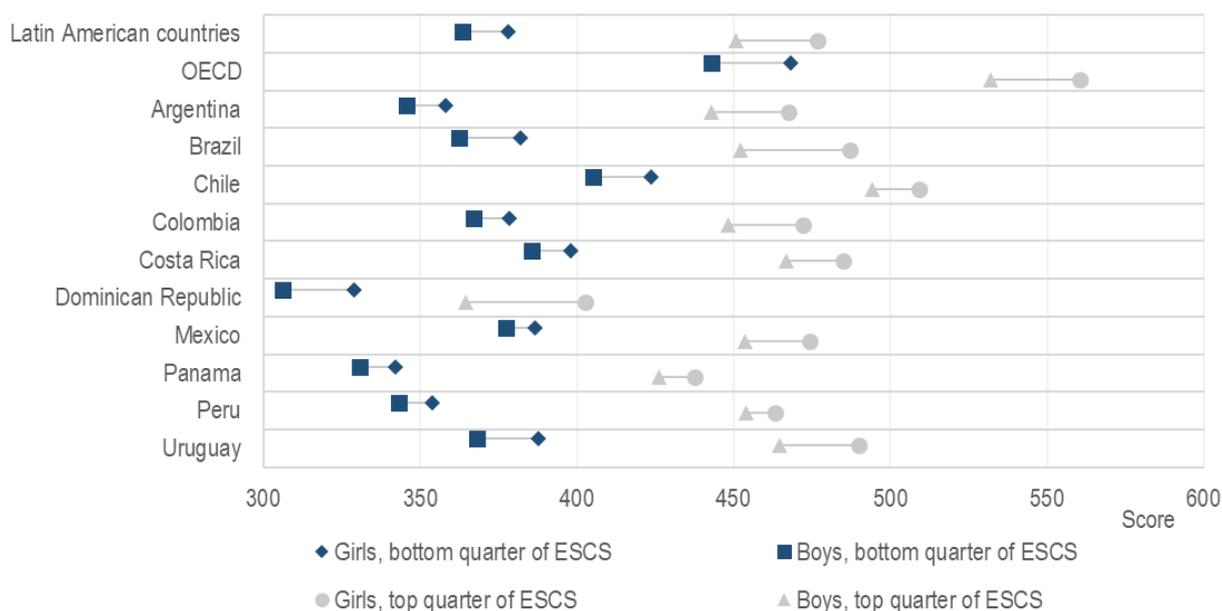


Note: The figure displays a kernel density plot of the reading performance using the pooled sample of Latin American countries that participated in PISA and a bandwidth size of 50. The first plausible value was used to compute the distribution.

Source: Authors' calculations using OECD (2019^[3]), *PISA 2018 Database*, <https://www.oecd.org/pisa/data/2018database/>.

There are large differences in the size of the gender gap in reading proficiency related to socio-economic background. Overall across LAC countries, advantaged students (those in the top quartile of the PISA index of economic, social, and cultural status in their country) scored on average 92.2 points higher in literacy than disadvantaged students (those in the bottom quartile of the index in their country).³ When comparing the average literacy performance of boys and girls within socio-economic groups, girls significantly outperformed boys, irrespective of their socio-economic status (Figure 3.4). The largest gender gaps are observed in the top quartiles in Brazil, the Dominican Republic and Uruguay.

Figure 3.4. Literacy proficiency, by gender and socio-economic status



Note: Socio-economic status is defined using the PISA index of economic, social, and cultural status (ESCS). All differences between girls and boys are statistically significant, except for advantaged students in Peru.

Source: Authors' calculations using OECD (2019^[3]), *PISA 2018 Database*, <https://www.oecd.org/pisa/data/2018database/>.

Attitudes towards learning are likely to explain gender differences in literacy skills. Evidence suggests a positive association between academic performance and enjoyment of reading (OECD, 2019^[4]). In Latin America, PISA 2018 data show that girls enjoy reading more than boys: on average, 50.4% of 15-year-old girls and 30.6% of 15-year-old boys reported reading for enjoyment for more than 30 minutes of their time. In OECD countries the rates are 42.5% for girls and 26.4% for boys. This could partly explain why girls tend to perform better in reading assessments. Another important aspect of learning is time devoted to homework. According to PISA 2018, girls in the region tend to spend more time than boys doing homework, with 73.5% of girls and 64.7% of boys reporting that they had studied at home for more than one hour after school. In OECD countries, 83.4% of girls and 73.5% of boys reported devoting over an hour to homework.

Differences in attitudes towards competition and test endurance could provide further explanations for existing gender gaps in skills among children and adolescents. In the region, PISA data found that boys, on average, are more likely to express positive attitudes towards competition than girls. Boys tend to find enjoyment in situations that involve competition with others (68.8% of boys and 59.4% of girls) and try harder when they are in competition with other people (72.6% of boys and 63.1% of girls). Another factor behind the gender gap might be endurance. Borgonovi and Bicek (2016^[5]) suggest that academic endurance, or the ability to maintain the baseline rate of successful test completion for the duration of a test, affects how well children perform on PISA. The authors found that boys seem to tire faster than girls, and that this gap in endurance is larger in reading than in mathematics and science.

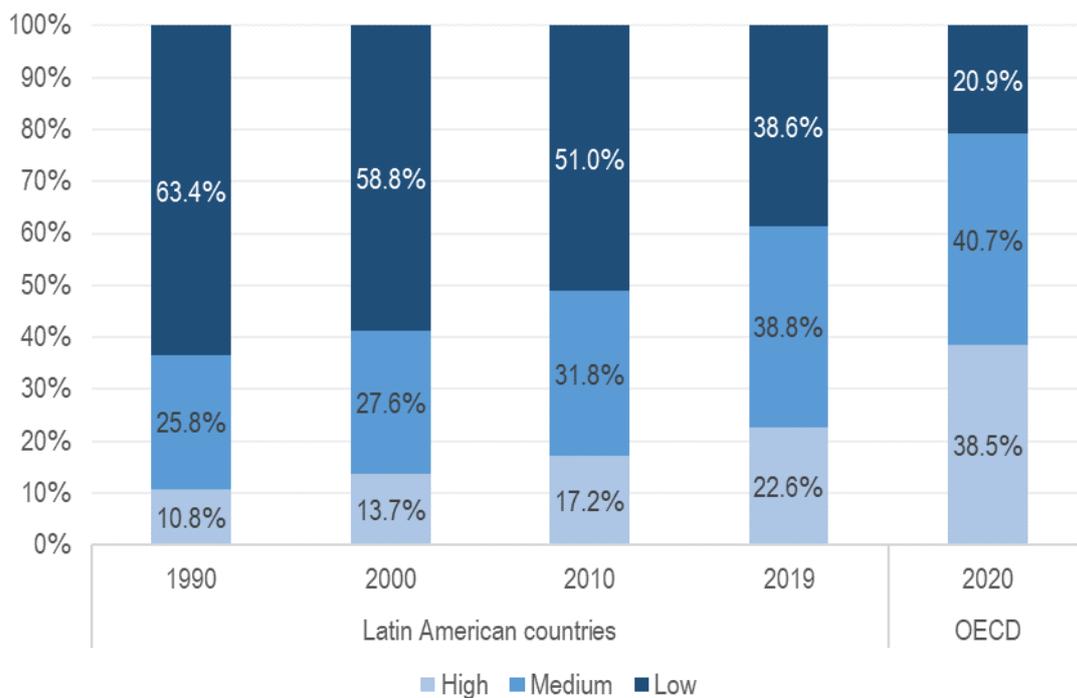
This section has shown that despite the steady increase in primary and secondary school enrolment rates, children in the region lack adequate reading skills. Girls tend to fare better than boys in literacy proficiency, but their labour-market outcomes do not reflect this relative advantage. The next two sections explore gender differences in skills and labour-market outcomes for adults in the region.

Adult skills, gender and labour-market outcomes

Educational attainment has increased in Latin America over the past decades, but the average share of low-qualified adults is still large compared to OECD countries. The average number of years of education attained by the adult population (ages 25 to 65) in the region increased from 7 years in 1990 to 9.5 years in 2020.⁴ During the same period, the region has experienced a sharp decrease in the share of low-educated adults (defined as those who attained 8 years or less of education), and an increase in medium-educated (with between 9 and 13 years of education) and high-educated adults (more than 13 years of education). Most Latin American countries, however, still have a larger share of low-educated adults and smaller shares of medium- and high-educated adults than OECD countries (Figure 3.5).

Figure 3.5. Trends in the distribution of education levels, 1990-2020

Percentage of the population aged 25-65 years old

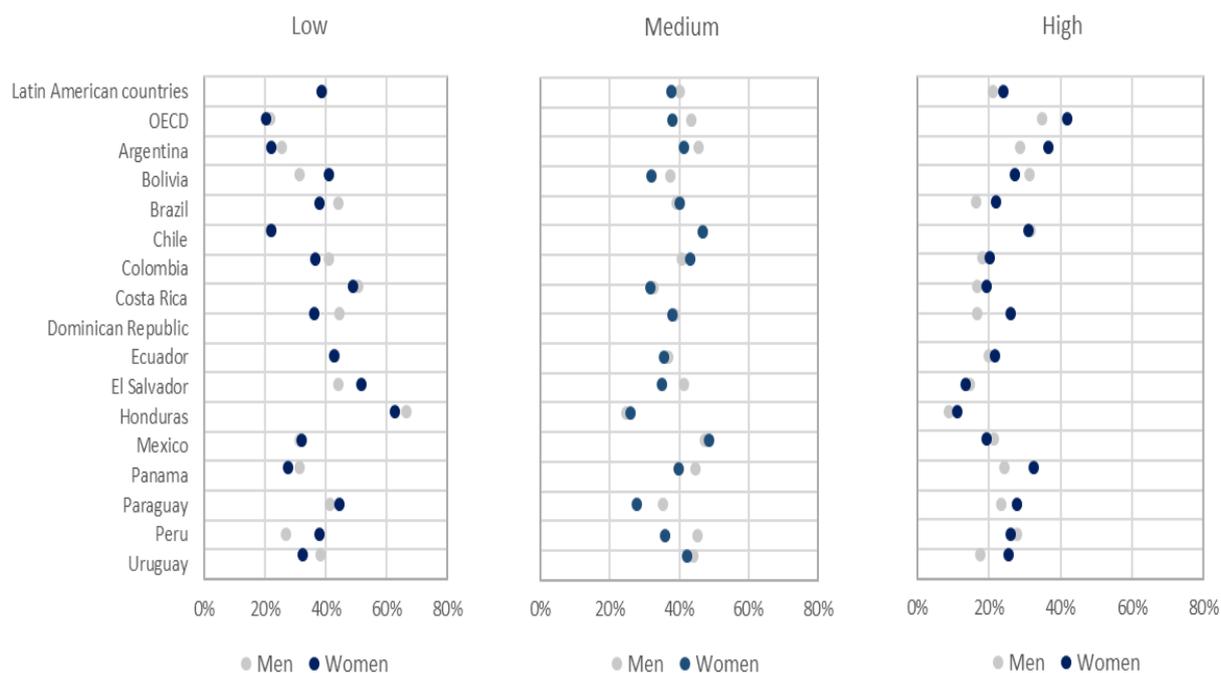


Note: Low-educated adults attained less than 9 years of education; medium-educated adults 9-13 years of education; and high-educated adults more than 13 years of education.

Sources: Authors' calculations using SEDLAC (2022^[6]), *Socio-Economic Database for Latin America and the Caribbean*, <https://www.cedlas.econo.unlp.edu.ar/wp/en/estadisticas/sedlac/> and OECD (n.d.^[7]), *OECD Statistics*, <https://stats.oecd.org/>.

In most Latin American countries, the distribution of educational attainment is similar for men and women. Data from 2019 indicate that, on average across the region, 38.8% of men and 38.4% of women would be considered low-educated, while 40.0% of men and 37.6% of women were medium-educated. While the share of medium-educated women lies between 30% and 50% in most countries, the share of low-educated women ranges from 30% or less in Argentina, Chile and Panama, to 50% or more in El Salvador and Honduras. Although there are more high-educated women than men in most Latin American countries, the share is still below the average for OECD countries. For instance, 36.7% of working-age women in Argentina, 32.4% in Panama, and 31.0% in Chile have completed more than 13 years of education, whereas the average share for OECD countries is 42% (Figure 3.6).

Figure 3.6. Distribution of education levels among 25-65-year-olds, by gender

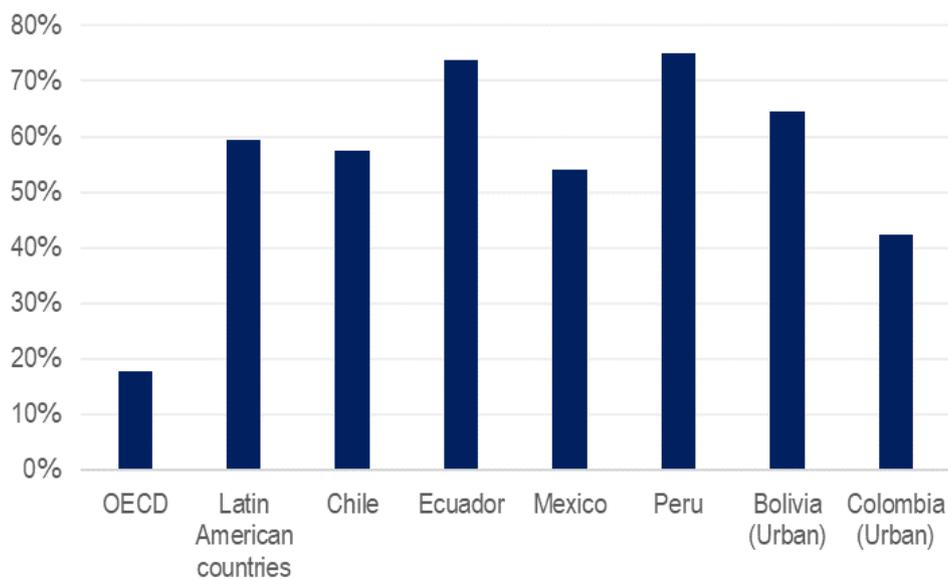


Note: The figure displays the percentage of the population in each education level using the most recent data available on average years of education. Low-educated adults attained less than 9 years of education; medium-educated adults 9-13 years of education; and high-educated adults more than 13 years of education.

Sources: Authors' calculations using SEDLAC (2022^[6]), *Socio-Economic Database for Latin America and the Caribbean*, <https://www.cedlas.econo.unlp.edu.ar/wp/en/estadisticas/sedlac/> and OECD (n.d.^[7]), *OECD Statistics*, <https://stats.oecd.org/>.

Despite their increased years of schooling, adults in Latin America lack basic reading⁵ skills, with little difference between men and women. Negative learning outcomes experienced in childhood and adolescence are likely to have translated into poor skill development as adults. Data from the first cycle of PIAAC for Chile, Ecuador, Mexico and Peru indicate that, on average, 59.5% of working-age adults (25-65-year-olds) have low levels of reading skills – i.e. scoring below Level 2.⁶ This is about 3.4 times more than the OECD average (Figure 3.7). Similarly, STEP data for Bolivia and Colombia show that, on average, 53.4% of working-age adults have low levels of reading skills. The results for men and women in the region are comparable, with 59.3% of men and 60.1% of women scoring below Level 2, in contrast with the OECD averages of 17.6% of men and 17.7% of women. Nor are there any substantial gender differences among different age groups (Figure 3.8). On average, 46.4% of women aged 25-29 are low performers, rising to 74.8% of 60-65-year-old women.

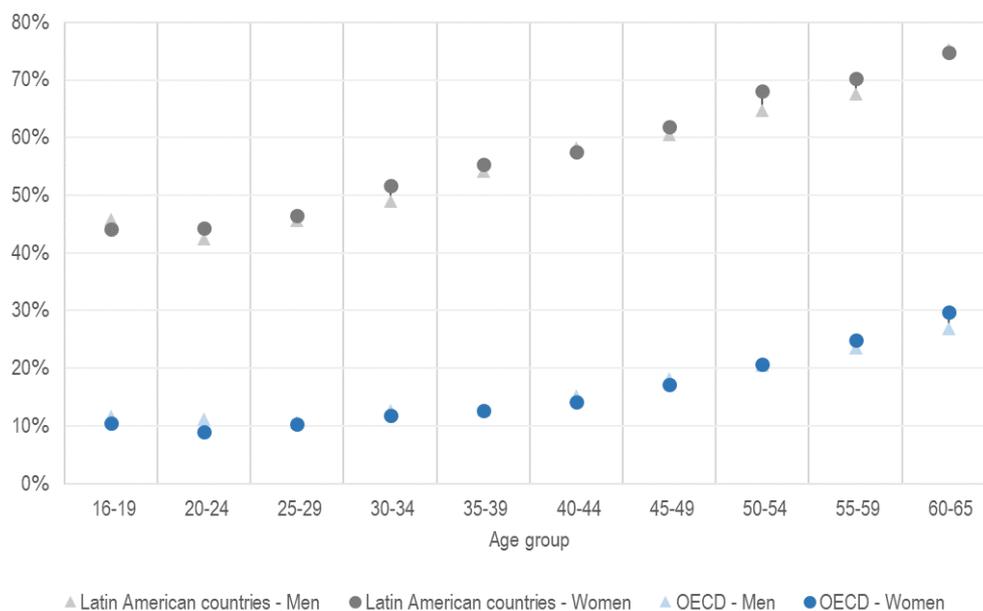
Figure 3.7. Low performers in reading among 25-65-year-olds



Note: Low performers are defined as those who score below Level 2 in reading. Data for Bolivia and Colombia only refer to the adult population living in urban areas. The LAC average is calculated only for PIAAC countries. The OECD average excludes Latin American countries.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

Figure 3.8. Low performers in reading among 25-65-year-olds, by gender and age group



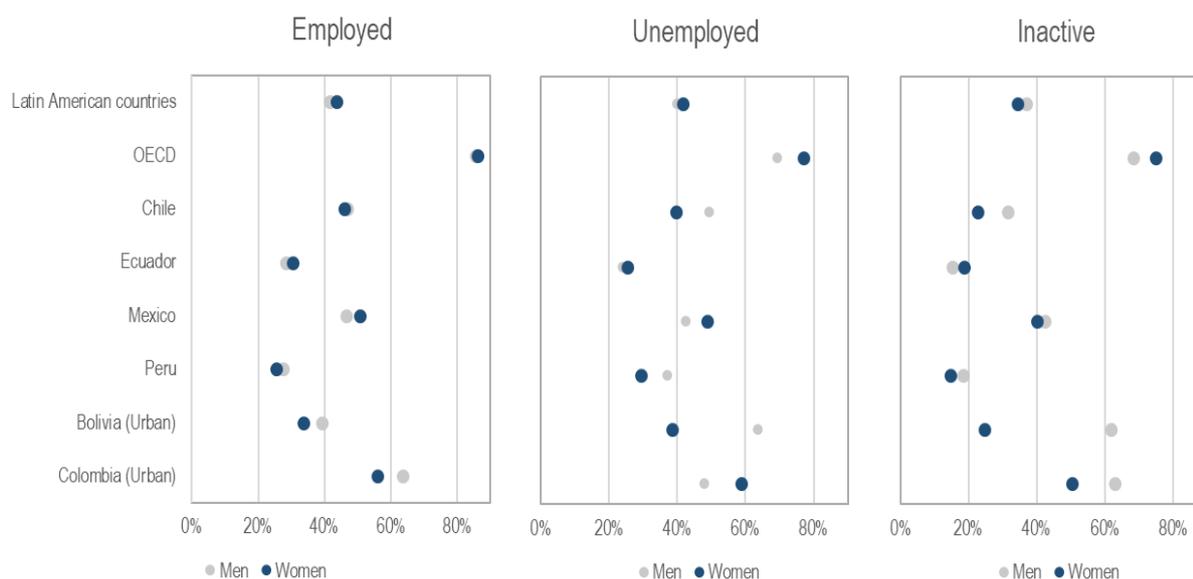
Note: Low performers are defined as those who score below Level 2 in reading. The LAC average is calculated only for PIAAC countries. The OECD average excludes Latin American countries.

Source: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru.

Other measures of the skills of the labour force in the region raise concerns. The latest version of the World Bank Enterprise Survey data shows that about one-third of firms (28.6%) in Latin America identified an inadequately trained workforce as a constraint to their activity. Of particular concern is the shortage of high-skilled workers in the science, technology, engineering and mathematics (STEM) fields, which is likely driven by deficiencies in learning during secondary school and inadequate university training, as well as a lack of self-confidence in mathematical abilities, particularly among women (Fiszbein, Cosentino and Cumsille, 2016^[10]).

Literacy skills also vary according to labour-market status. PIAAC data indicate that, on average, about 42.4% of employed adults in the Latin American sample have a high proficiency level in reading (at or above Level 2), which is about 43 percentage points below the OECD average of 85.9%. Unemployed and inactive adults in the region tend to be less proficient: 41.1% of unemployed individuals, and 34.9% of inactive ones, were in the high-level category on average. The data also reveal some small gender differences. On average, 43.5% of employed women and 41.7% of employed men have high literacy skills but the gender gap is reversed for inactive adults, with 34.4% of inactive women and 36.9% of inactive men having high skills (Figure 3.9).

Figure 3.9. Distribution of high performers in reading among 25-65-year-olds, by labour-market status



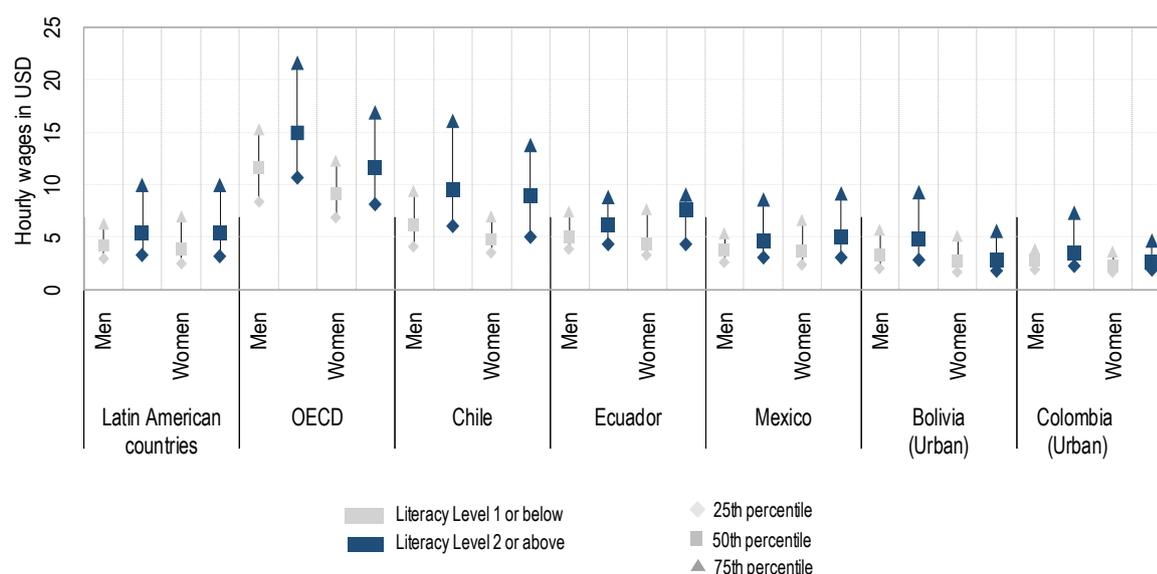
Note: The figure displays the percentage of high performers in reading (at or above Level 2). The LAC average is calculated only for PIAAC countries. The OECD average excludes Latin American countries.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

The skills of informal workers are equally important. The informal sector is large in Latin America and poor education and skills have been identified as one of the underlying reasons for labour informality in the region (World Bank, 2019^[11]).⁷ The skills profile of informal workers tends to be low: on average, 50% of informal workers in Bolivia and Colombia scored below Level 2 in the reading skills measure of STEP 2011.⁸ Women fare slightly worse than men by this metric: 69% of women and 67% of men working in the informal sector in Bolivia have a low level of reading proficiency. In Colombia the figures were 47% of women and 43% of men.

Workers with greater literacy proficiency earn more on average, but the PIAAC data reveal gender differences in the distribution of earnings (Figure 3.10). In OECD countries, the top 25% of best-paid women scoring at Level 2 or above earn, on average, about 22% less than the top-paid men scoring at the same level. In marked contrast, in Latin America, higher-skilled women at the top of the earnings distribution earn about the same as similarly skilled men. This overall average disguises different patterns in countries within the region. In Chile, among those scoring at Level 2 and above, the top 25% of best-paid women earn about 15% less than top-earning men. The pay gap is substantially larger in urban Bolivia (where they earn 40% less) and urban Colombia (37% less). In contrast, top-earning, higher-skilled women in Mexico earn 6.4% more than their male peers.

Figure 3.10. Distribution of earnings among 25-65-year-olds, by literacy proficiency and gender

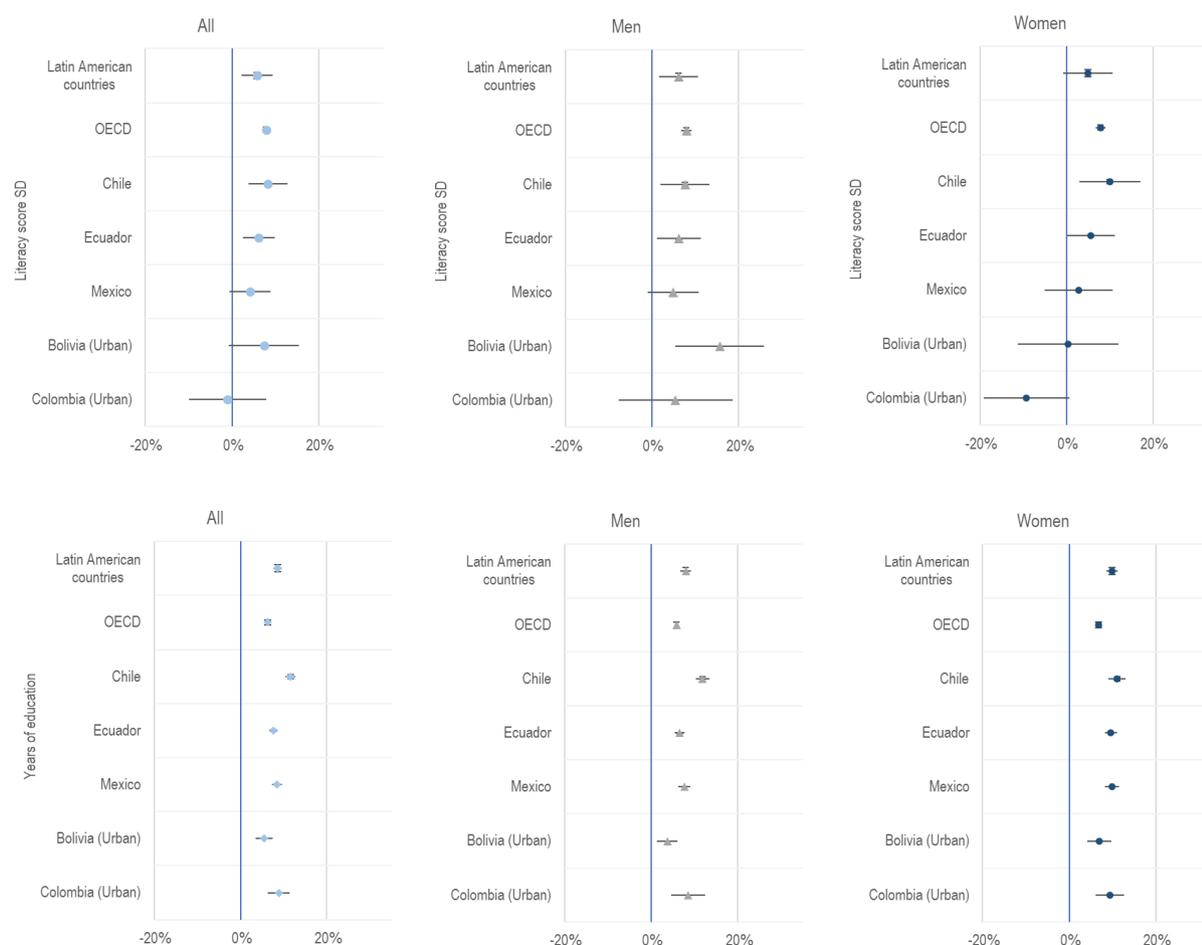


Note: The data are based on gross hourly earnings of full-time wage and salary workers (30 hours or more per week) aged 25 to 65 expressed in purchasing-power-parity-adjusted USD (2012). The wage distribution was trimmed to eliminate the 1st and 99th percentiles. The first plausible value was used for determining the proficiency level. The LAC average is calculated only for PIAAC countries. The OECD average excludes Latin American countries.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

The earning returns to reading skills are 5.8% in Latin American countries, after adjusting for years of education and potential experience (Figure 3.11). On average, the returns to reading skills in the region are lower than in OECD countries, where they could reach 7.9%. The effect of skills on earnings appears to be lower for Latin American women (5%) than for men (6.1%). Although the estimations using the PIAAC data are interpreted as associations rather than causal effects, they suggest that, for women, the increase in earnings associated with a one-standard-deviation increase in reading proficiency ranges from 5.7% in Ecuador to 10% in Chile.⁹ For men, the increase in earnings ranges from 6.2% in Ecuador to 15.6% in urban Bolivia. The effect of reading skills proficiency on workers' earnings in Mexico and urban Colombia is likely to be null.

Figure 3.11. Returns to literacy proficiency



Note: The estimation sample uses data from full-time wage and salary workers aged 25 to 65. Data for Bolivia and Colombia only refer to the adult population living in urban areas. Linear regressions are weighted by sampling weights. The wage distribution was trimmed to eliminate the 1st and 99th percentiles. The dependent variable is the log of gross hourly earnings. Regressions in Column 1 control for gender, years of education and potential work experience. Regressions in Columns 2 and 3 control for years of education and potential work experience. Pooled specifications include country fixed effects, give the same weight to each country, and only include countries in the PIAAC sample. Robust standard errors are used for inference.

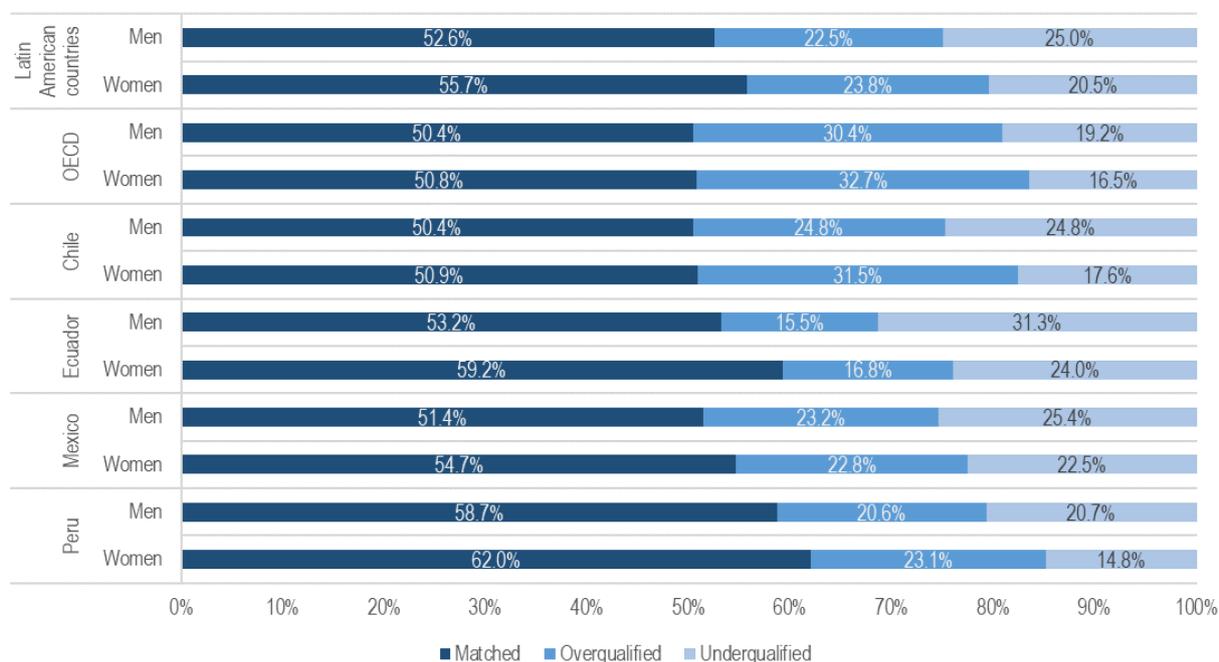
Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

Although girls do better than boys in reading and almost as well in mathematics during their formative years, gender gaps in labour-market outcomes may be partly due to women's choices of careers. The unequal representation of women in the labour market may reflect significant gender differences in career aspirations among adolescents. On average, across Latin America, PISA 2018 data found that 33.5% of 15-year-old students expected to work in a science-related occupation by the age of around 30 (see Chapter 2 for more details on 15-year-old students' career aspirations in the region). Although a slightly larger proportion of girls in the region (34.6%) expected to work in STEM than boys (32.4%), Latin American women are under-represented in STEM fields (López-Bassols et al., 2018^[12]). PIAAC data also provide evidence of gender differences in occupation in the region. In the high-skilled occupations, there are slightly more men (52.45%) than women (47.55%), whereas the opposite is true in medium-skilled occupations, where women account for 59% of the labour force.¹⁰ An analysis by occupation¹¹ finds striking over-representation of men among science and engineering professionals, 70.2% of whom are men. In

contrast, women are over-represented among health professionals (71.4% women) and teaching professionals (62.5% women).¹²

The first cycle of PIAAC also provides information on the qualifications that workers consider necessary to do their jobs.¹³ Comparing workers' actual qualifications with self-reported qualification requirements, measured in years of education, suggests 53.8% of workers in the region have the right level of qualification for their jobs, about 3 percentage points above the OECD average. On average, about one-quarter of workers in the region have lower educational attainment than required by their jobs, with a similar share who are overqualified. Mismatches vary by country, however, with the share of underqualified workers ranging from 18.2% in Peru to 28.2% in Ecuador. Men are more likely to be underqualified: across the region 24.9% of men have lower educational attainment than required for their jobs, compared to 20.5% of women (Figure 3.12). The prevalence of underqualification among men might reflect both the rapid growth in educational attainment among women and that firms are now demanding higher qualifications than before.

Figure 3.12. Qualification mismatches among 25-64-year-olds, by gender



Note: The estimation of qualification mismatches uses data from full-time wage and salary workers aged 25 to 65. Qualification levels are defined by years of education. Workers are asked what the usual qualifications would be, if any, "that someone would need to get (their) type of job if applying today". The answer is compared to their actual qualification to identify mismatches. If they are more highly educated than their job requires, workers are classified as overqualified; if the opposite is true, they are classified as underqualified.

Source: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/.

Skills, gender and family background

The level of human capital that individuals accumulate is associated with the conditions of the families they are born into. Family effects and their relationship with human capital, particularly education, have been thoroughly studied. The Coleman Report (1966^[13]) compiled the efforts of the US Education Commission to provide, for the first time, a comprehensive set of evidence based on a wide sample of families. Before that, education policies were usually designed with a focus on improving inputs for better achievements:

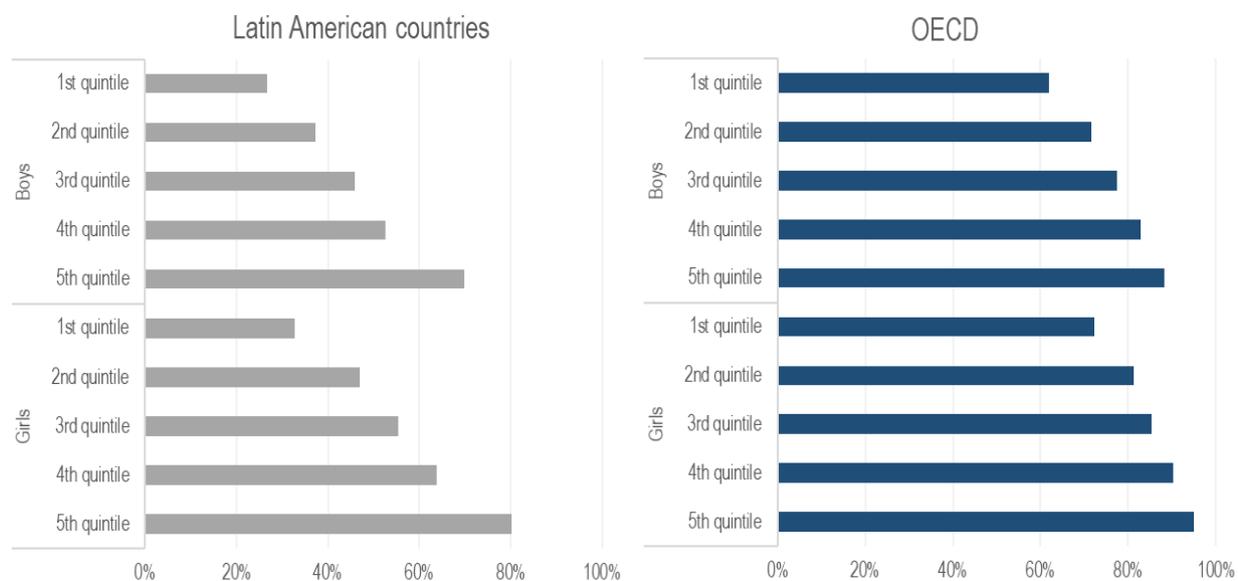
better school infrastructure, varying class sizes and better teachers, for example (Egalite, 2016^[14]). Afterwards, more attention was paid to the relation between human capital formation and household dynamics. Since then, there has been a huge refinement in the study of the transmission channels through which families affect future generations' lives. One of the main findings, which is now a current consensus, is that family effects account for 45-50% of the variation in years of schooling (Salvanes and Bjorklund, 2010^[15]).

Family background and skills development

There are multiple channels by which inequality transmits from one generation to the next. One is socio-economic status, which is associated with the performance of children in reading assessments, as we will show below. Another is parental education. Better-educated parents are more aware of the value of more years of schooling and a better quality of education. Even after controlling for income level, their children are usually more educated (Salvanes and Bjorklund, 2010^[15]). The influence of parental education can be long-lasting, especially in the labour market. Evidence suggests that parental education accounts for more social mobility than parental income itself (Winthrop, Barton and McGivney, 2018^[16]). This relationship is, however, highly dependent on countries' education systems (Scandurra and Calero, 2017^[17]). This section explores the extent to which parental education may affect the returns to reading skills in the labour market in the region.

There is a socio-economic gradient in reading proficiency in Latin America. Figure 3.13 displays the relationship between socio-economic status, based on the ESCS index, and proficiency in reading. In the Latin American countries with data available, the higher socio-economic quintiles tend to concentrate the largest number of both girls and boys with greater reading performance. OECD countries display a somewhat less unequal picture, since larger numbers of top performers can be found even among the lowest quintiles of the socio-economic distribution, irrespective of their gender.

Figure 3.13. High performers in reading among 15-year-olds, by gender and socio-economic status

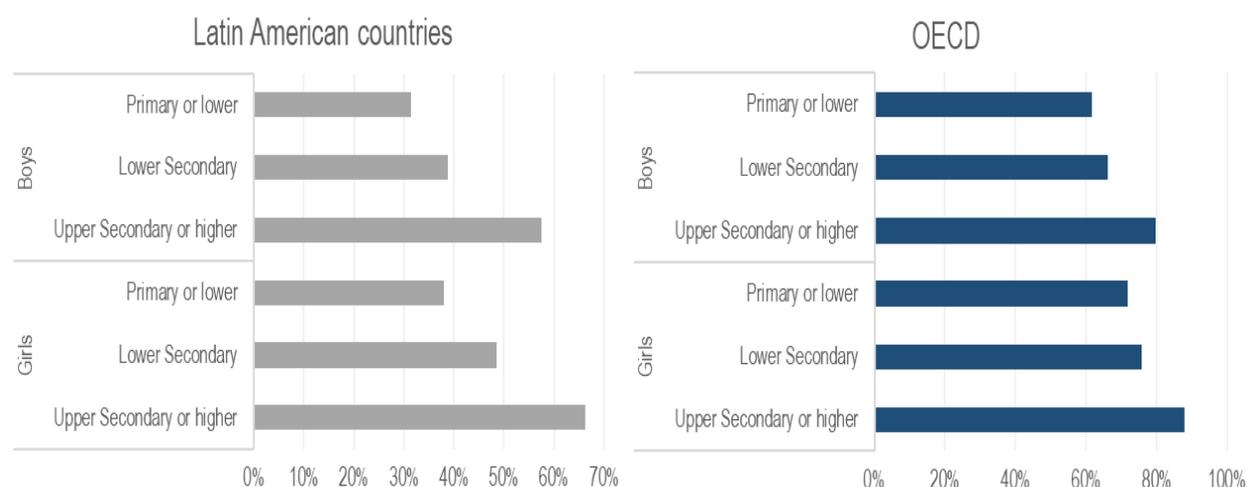


Note: The figure displays the percentage of high performers in reading, defined by scores of Level 2 or above in PISA, for each quintile based on the PISA index of economic, social and cultural status (ESCS).

Source: Authors' calculations using OECD (2019^[3]), *PISA 2018 Database*, <https://www.oecd.org/pisa/data/2018database/>.

Parental education is also likely to influence reading proficiency and educational attainment in Latin America. PISA data reveal substantial gaps in reading skills between children whose mothers had high levels of education (upper secondary or above), and those with low levels of education (lower secondary or below).¹⁴ Figure 3.14 shows that 37.9% of girls in the region whose mothers had only primary education or below, and 48.5% of those whose mothers had completed lower secondary education, scored at or above Level 2 in reading tests, compared to 66.2% of girls whose mothers completed upper secondary or tertiary education. A similar pattern is found among children in all the participating Latin American countries, irrespective of gender. Similarly, PIAAC data indicate that, among Latin American women whose mothers had at least some tertiary education, 38.5% completed upper secondary education and 44.7% completed tertiary education (Figure 3.15). Among women with less educated mothers, in contrast, 30.0% completed upper secondary and 16.3% tertiary education, with similar differences for men. The most striking difference between OECD countries and Latin America is observed among men and women with less educated mothers: these Latin Americans are four times more likely to complete no more than primary education.

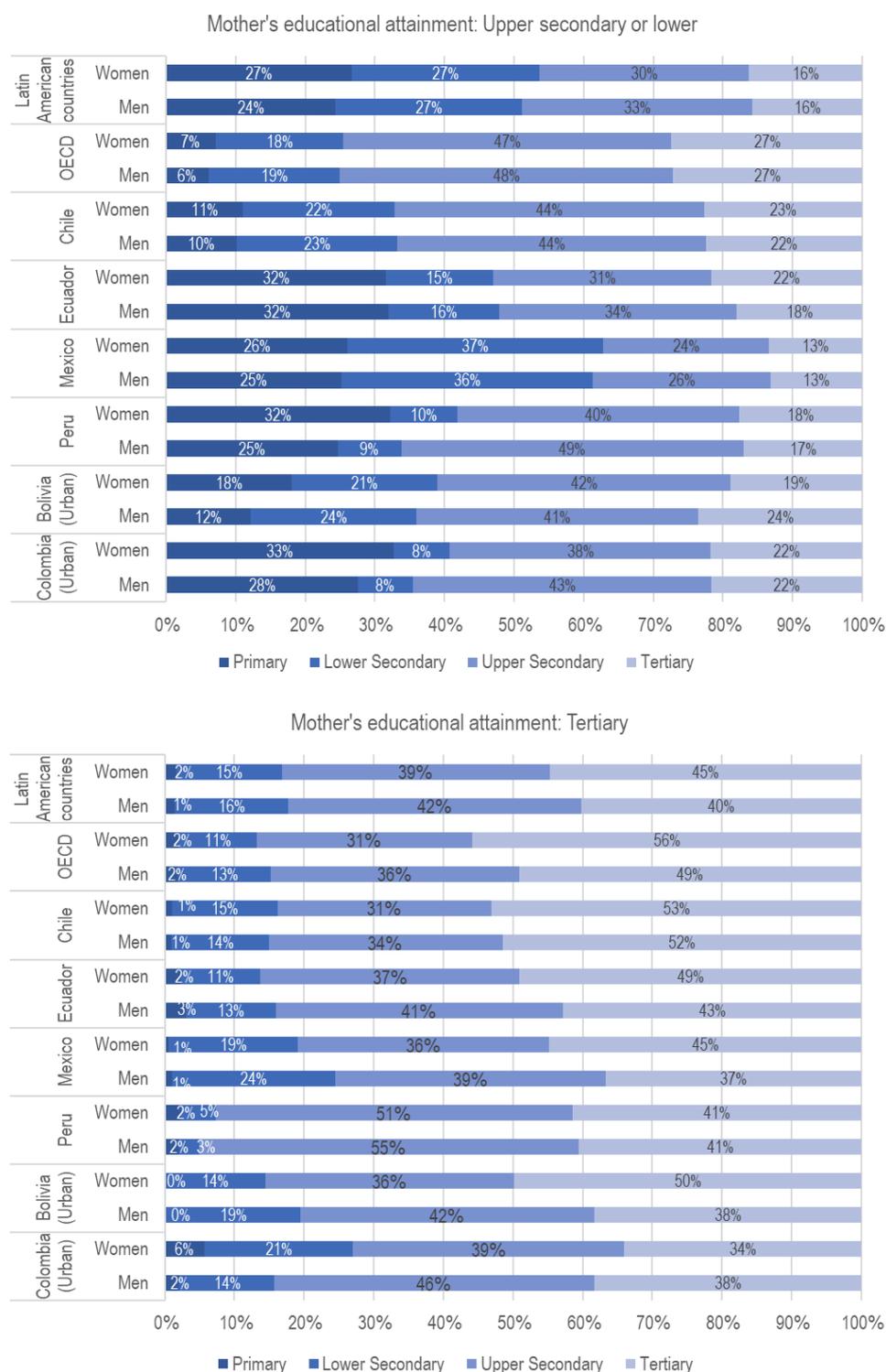
Figure 3.14. High performers in reading among 15-year-olds, by gender and mother’s educational attainment



Note: The figure displays the percentage of high performers in reading, defined by scores of Level 2 or above in PISA.

Source: Authors' calculations using OECD (2019^[3]), *PISA 2018 Database*, <https://www.oecd.org/pisa/data/2018database/>.

Figure 3.15. Educational attainment among 25-65-year-olds, by gender and mother's educational attainment



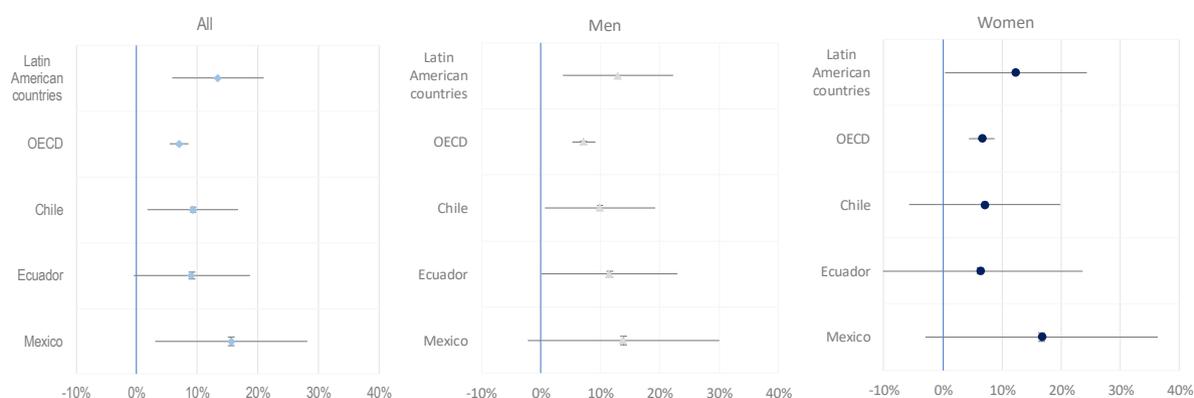
Note: For STEP, tertiary includes ISCED 2011 Level 4 (post-secondary non-tertiary) or higher educational attainment. LAC statistics only include PIAAC countries. OECD statistics exclude Latin American member countries.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

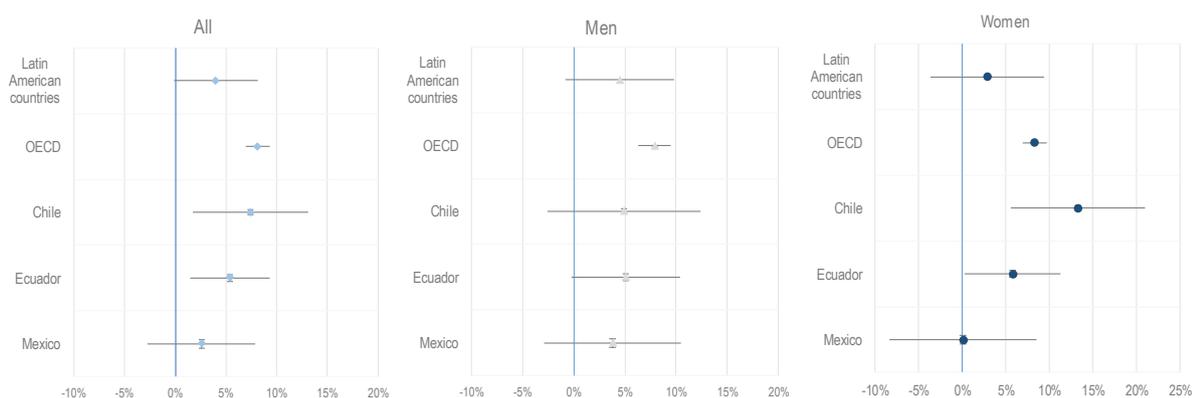
The influence of parental education also seems to extend to the labour-market outcomes of their children. The returns to reading skills tend to increase with the education level of workers' mothers, and are larger for Latin American men than for women. The estimation of Mincer equations using PIAAC data suggests that average returns to skills for workers with high-educated mothers (who achieved upper secondary or more) range from 9.1% in Ecuador to 15.6% in Mexico, two or more percentage points higher than the estimates for workers with mothers who attained a lower secondary education or less (Figure 3.16, Panels A and B). Pooled estimates for the region indicate that average returns might be substantially larger for workers with high-educated mothers, at 13.4%, compared to 4.0% for workers with low-educated mothers, in line with the estimates for OECD countries. Within-country comparisons suggest that in Chile and Ecuador the returns to reading skills for workers with high-educated mothers are likely to be larger for men than for women, while the opposite is observed in Mexico. For men with high-educated mothers, returns range from 10.0% in Chile to 13.9% in Mexico, whereas for women they range from 6.3% in Ecuador to 16.7% in Mexico.

Figure 3.16. Returns to literacy proficiency, by mother's educational level

Panel A. High maternal education level



Panel B. Low maternal education level



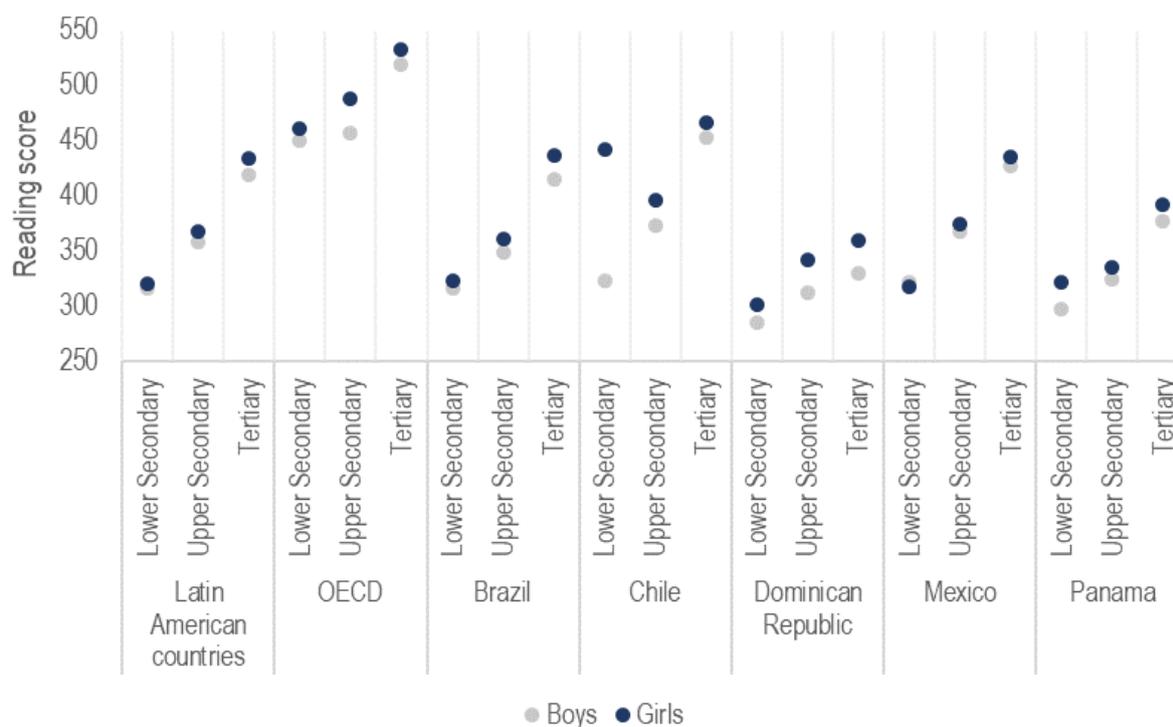
Note: The estimation sample uses data from full-time workers aged 25 to 65. High-educated mothers attained upper secondary education or more. Linear regressions are weighted by sampling weights. The dependent variable is the log of gross hourly wages. All regressions use the first plausible value to construct the standardised reading score. Regressions in Column 1 control for gender, years of education and potential work experience. Regressions in Columns 2 and 3 control for years of education and potential work experience. The wage distribution was trimmed to eliminate the 1st and 99th percentiles. Pooled specifications include country fixed effects and give the same weight to each country. Robust standard errors are used for inference.

Source: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/.

Expectations and skills development

High parental expectations are associated with higher reading skills in the region. PISA data suggest that across all of Latin America, the majority of parents want their children to achieve tertiary education: 85% of parents of boys, and 89% of parents of girls wish their children to get a university degree or more. In contrast, in OECD countries only 67% of parents of boys and 73% of parents of girls hope their children will complete tertiary education. Although these expectations seem somewhat unrealistic for Latin Americans, given the actual educational achievement figures described earlier in this chapter, they might act to some degree as a self-fulfilling prophecy. Across the region, parents' hopes for the maximum educational attainment their children will achieve are positively associated with reading skills: children whose parents expect them to achieve no more than a lower secondary education had lower reading scores in PISA (Figure 3.17). Further analysis by gender suggests that girls who are expected to complete tertiary education tend to obtain higher reading scores than boys with similar expectations. In Latin America, this group of girls scored 15.8 points higher than their male peers in PISA tests, on average. These patterns seem consistent with those observed in OECD countries.

Figure 3.17. Literacy proficiency among 15-year-olds, by parental hopes for their educational achievement and gender



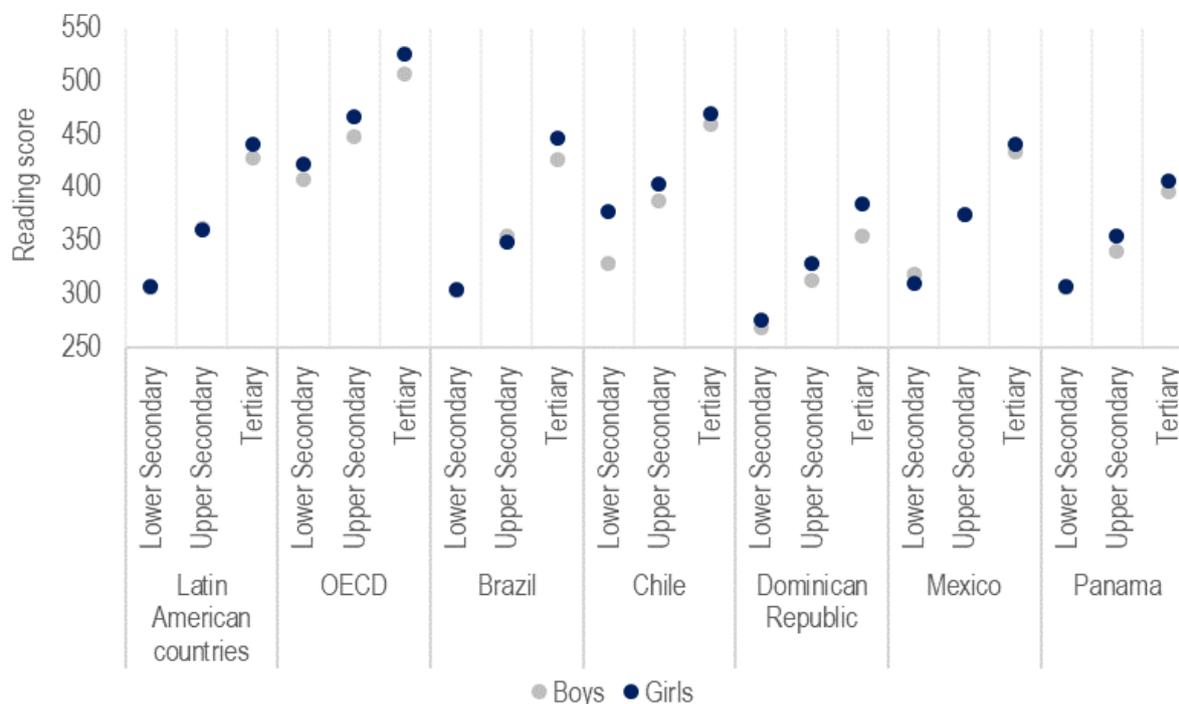
Note: Students are grouped by the highest level of educational attainment their parents hope them to achieve. The data points depict the answers of parents.

Source: Authors' calculations using OECD (2019^[3]), *PISA 2018 Database*, <https://www.oecd.org/pisa/data/2018database/>.

Children's hopes and expectations are just as important as their parents'. Girls and boys who set themselves higher expectations of educational achievement tend to have better reading performance. In Latin America, a larger proportion of girls than boys expect to achieve tertiary education (87% compared to 78%). The shares are larger than for OECD countries, where just 82% of girls and 74% of boys have similar expectations. In some countries, like Chile, as many as 92% of girls expect to achieve tertiary

education. Nevertheless, there is growing evidence that children's expectations are more granular: boys are more likely to see themselves as engineers or scientists, while girls see themselves as health workers (Bos et al., 2016^[18]). These expectations are also correlated with PISA reading scores: on average, children in Latin America who expect to complete tertiary education score 73.4 points more than those expecting to complete upper secondary (Figure 3.18). This holds especially true for girls: girls who hope to complete tertiary education score, on average, 10.4 points more than similarly ambitious boys in Chile, and 6.8 points more in Mexico.

Figure 3.18. Literacy proficiency among 15-year-olds, by self-expectations for their educational achievement and gender



Note: Students are grouped by the highest level of educational attainment they hope to achieve. DR denotes the Dominican Republic.
Source: Authors' calculations using OECD (2019^[3]), *PISA 2018 Database*, <https://www.oecd.org/pisa/data/2018database/>.

Skills and family formation and configuration

Differences in performance in school have implications for many of the decisions taken by men and women during their adult life. This section examines the relationship between enrolment in education and reading skills and a number of dimensions of family formation and composition. These include the decision to live with a partner, whether and when to become a parent (and adolescent pregnancy in particular), family structure, and solo parenthood.

Reading skills and cohabitation

Marrying or deciding to live with someone is an important step in the lives of most adults. This section explores the relationship between cohabitation (understood as living with a partner irrespective of marital status) and education and reading proficiency levels, while analysing differences by age, gender and educational status.

In Latin America, adults with the least education and lowest reading skills have the highest rates of cohabitation. For instance, while 68% of adults in the region with only a primary education or less live with a partner, less than 55% of those who have achieved secondary education, or more, do so. The same pattern holds for reading levels: while 61% of those with reading proficiency less than Level 2 (the minimum level required for quality jobs) live with a partner, only 49% of those with higher reading proficiency do (Table 3.1). Peru stands out as the country with the largest differences between those who have low reading proficiency and the rest: 20 percentage points for all, and 22 percentage points for women. Although Latin American countries have lower rates of cohabitation than those in the OECD, a similar pattern holds for most OECD countries and the United States (Fry and Cohn, 2011^[19]).

The higher levels of cohabitation amongst those with low reading skills are driven by the young, especially young women. As Table 3.1 shows, among those aged 55 or more, the difference in cohabitation rates in Latin America between those with low reading proficiency and the rest is only 3 percentage points (69% compared to 66%), while this difference rises to 14 percentage points for those aged 16-24 (29% compared to 15%). The rate of cohabitation for young women with low reading skills is strikingly high for that age group, with one in three living with a partner. In contrast, among older men (aged 55 or more), cohabitation is more common for those with better reading skills: 78% of those with high reading levels cohabit, compared to 76% of those with lower scores. This difference is particularly strong in Colombia (9 percentage points) and Ecuador (7 percentage points), and less so in Mexico and Bolivia (3 percentage points). This pattern holds for the OECD in general. In contrast, in Chile and Peru, older men with low reading levels have higher cohabitation rates than their higher-skilled peers.

Table 3.1. Percentage of 16-65-year-olds living with a partner, by literacy proficiency, gender and age group

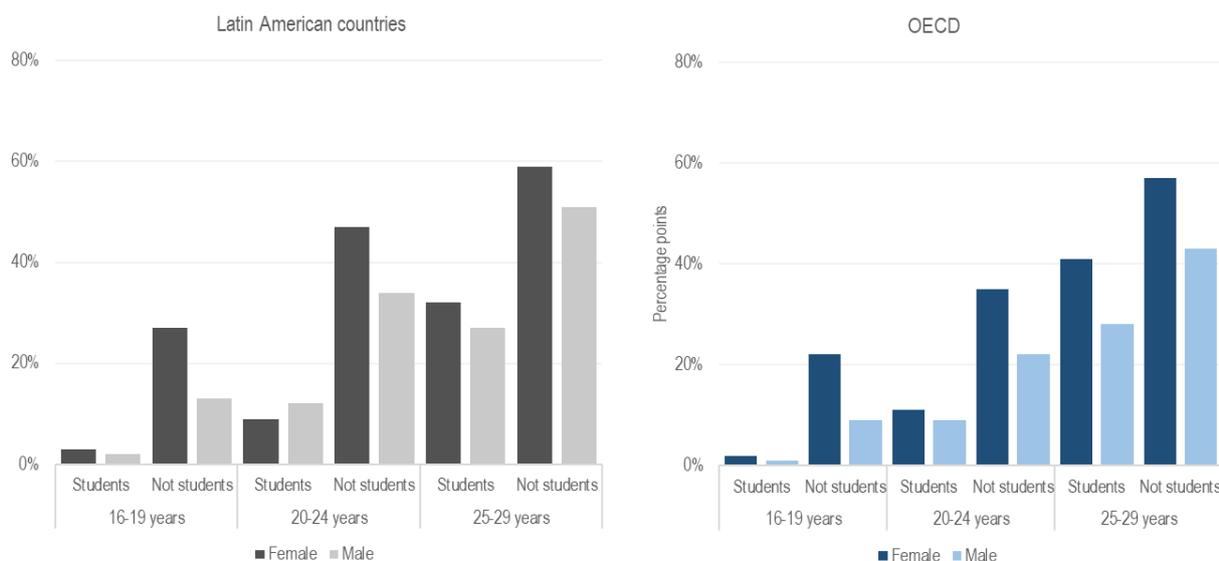
	Age group	All		Women		Men	
		<L2	L2+	<L2	L2+	<L2	L2+
LAC	All	61	49	60	49	62	49
	16-24	29	15	34	19	23	12
	25-34	63	55	64	56	61	53
	35-44	74	72	71	68	78	77
	45-54	74	71	70	69	79	74
	55-65	69	66	63	56	76	78
OECD	All	61	49	66	62	64	60
	16-24	25	11	30	14	21	8
	25-34	62	56	66	62	57	50
	35-44	74	78	74	78	74	78
	45-54	74	80	74	79	74	81
	55-65	74	79	70	74	78	85

Note: <L2 refers to those scoring below Level 2 for literacy skills; L2+ to those achieving Level 2 and above.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

For young individuals, schooling seems to delay the process of moving in together. As Figure 3.19 shows, both in Latin America and in the OECD, students of all ages are significantly less likely to live with a partner than those who are not studying. Consistent with the findings above, for both students and non-students, living with a partner is more common amongst young women than young men.

Figure 3.19. Percentage of 16-29-year-olds living with a partner, by age, student status and gender

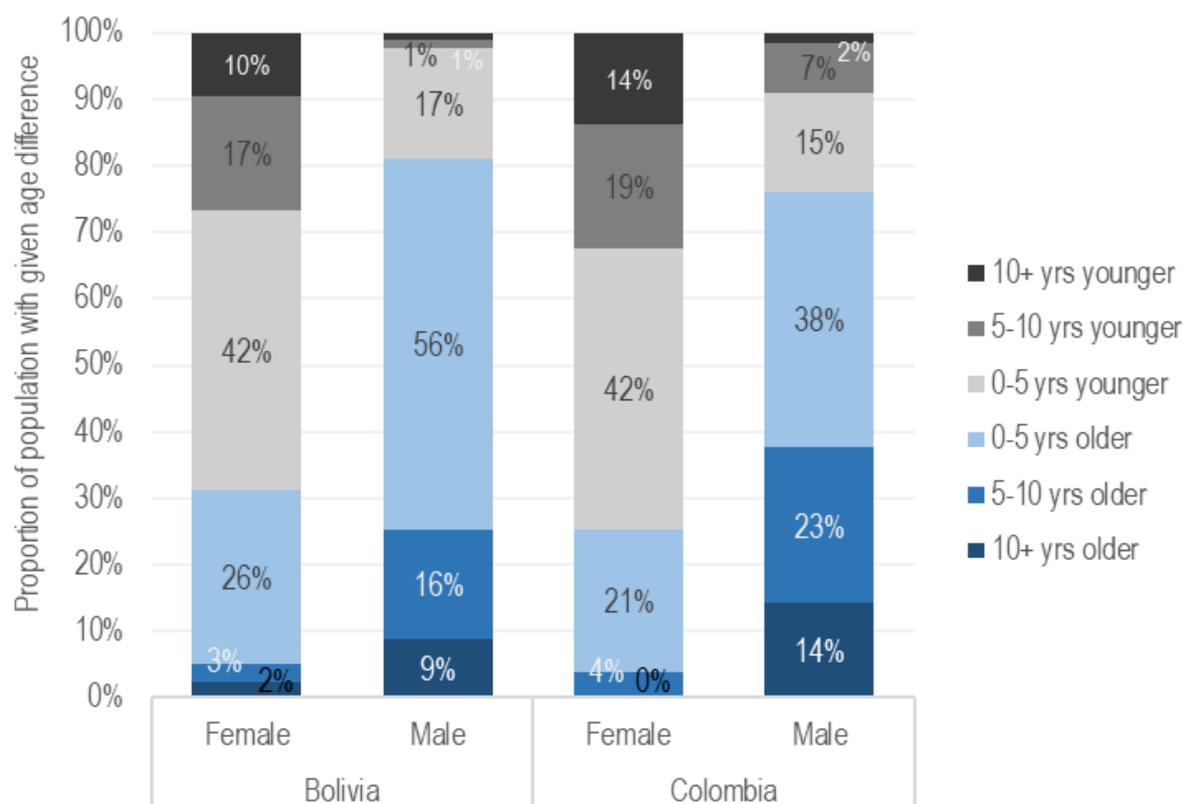


Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru; World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

The pattern of women starting to cohabit much earlier in life than men can be explained by the fact that men tend to live with younger partners. As can be seen in Figure 3.20, in Colombia, 76% of men and 25% of women are older than their partners. A similar pattern holds in Bolivia, where 81% of men and only 31% of women are older than their partners. Although the data only cover urban areas of Colombia and Bolivia, the pattern of women being younger than their male partners has been widely analysed across religions and regions (Pew Research Center, 2019^[20]) and has been documented for OECD countries (Jonas and Thorn, 2018^[21]). In OECD countries, including the United States, some researchers have found that men are more likely than women to start living with a new partner after a divorce or separation or the death of their spouse or partner (Jonas and Thorn, 2018^[21]; Cornell, 1989^[22]).

Living with a partner yields economic benefits for those with more education. Since women tend to move in with a partner at a younger age, and after completing fewer years of education, they do not reap the benefits of cohabitation as much as men. Using data for the United States, Fry and Cohn (2011^[19]) find that while on average college-educated cohabiters (either married or not) are better off than college graduates without partners, those without college degrees who cohabit are not better off economically than those without college degrees who do not have a partner. Lefgren and McIntyre (2006^[23]) also find that women's educational attainment is strongly related to their husband's income and marital status and that "women's education may have a positive causal effect on husband's earnings, though not on the probability of marriage".

Figure 3.20. Partner's age difference, by gender



Note: Data only refer to the adult population living in urban areas.

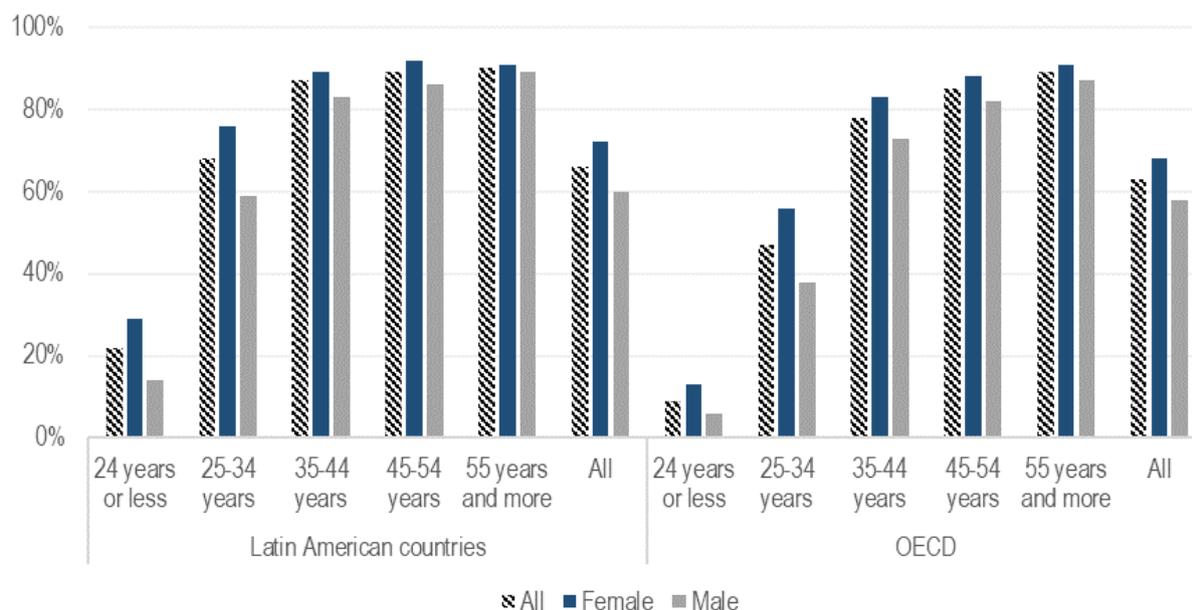
Source: Authors' calculations using World Bank (n.d.^[9]), STEP Skills Measurement Program, <https://microdata.worldbank.org/index.php/catalog/step>.

Reading skills and parenthood

Having a child – and the age when individuals have their first child – has a significant impact on the responsibilities and the dynamics of a household. The age at which they become parents, and the number of children they have, are both defining elements in a person's life. The consequences are especially strong when a girl becomes pregnant in adolescence, as it is not uncommon for teenage mothers to leave school, voluntarily or involuntarily, leading to employment that tends to be unstable and poorly remunerated and too often traps young women into a vicious cycle of poverty. This section explores the relationship between parenthood and education and reading levels, analysing differences by age, gender and education status.

As expected, in both Latin American and OECD countries, for almost all age groups and countries, women of reproductive age are more likely to report being a parent than men.¹⁵ The probability of being a parent significantly increases with age, plateauing at around 40 (Figure 3.21). This is consistent with the fact that women's fertility naturally declines with age. Data show that being a parent is more common in LAC countries than in the OECD, and the differences are especially wide for the younger cohorts: 12 percentage points for those under 25, 21 percentage points for 25-34-year-olds, and 9 percentage points for 35-44-year-olds). After the age of 45, more than four in every five people in both the OECD and LAC have children.

Figure 3.21. Percentage of parents, by age group and gender

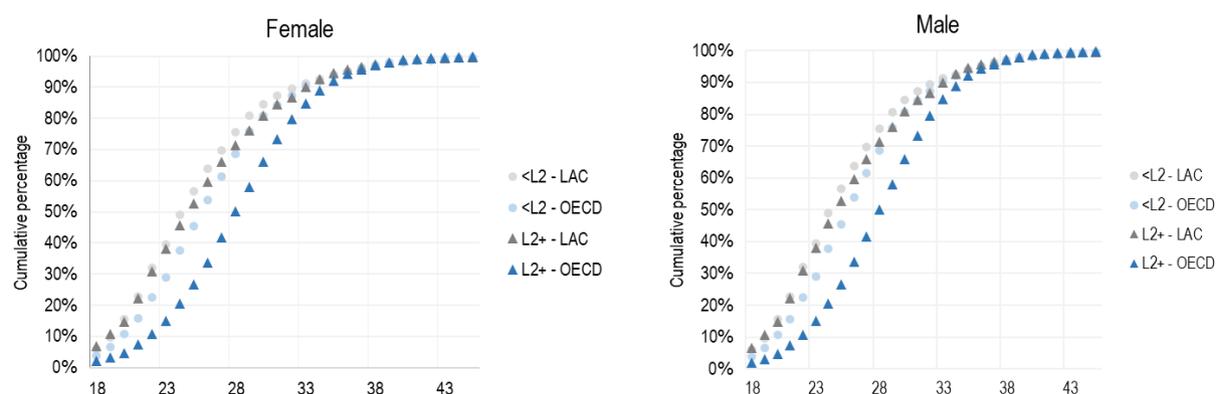


Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

Reading proficiency levels are correlated with delayed parenthood, as is educational attainment. The relationship between reading, enrolment and parenthood might be caused by those studying deciding to wait until the end of their studies to have children, by which time they have developed greater reading skills. Singh's (1998^[24]) study in 43 developing countries finds that higher educational attainment is associated with lower rates of adolescent childbearing. For Latin America, Heaton et al. (2002^[25]) have shown that education delays the transitions between initiation of intercourse, partnerships and giving birth, and in particular how secondary levels of schooling are associated with lower early marriage and parenthood.

This is confirmed by our data: as can be seen in Figure 3.22, parenting started earlier amongst those with low reading skills, and in Latin America this is especially the case for women. For instance, while 6% of young women aged 19 with low reading skills have become mothers in OECD countries, the figure is 27.8% among 19-year-old women with low reading skills in Latin America. The difference between the two groups of countries can be seen by the fact that 19-year-old women with high literacy skills in Latin American are as likely to be mothers as 19-year-old women with low literacy skills in the OECD. The difference widens over time: among women aged 25, 47% of those with high reading levels in the OECD are mothers compared to 78.5% of those with low reading skills in Latin America. The same pattern is observed in men although the differences are not as stark: just 3% of boys aged 19 with high literacy levels are parents in the OECD compared to close to 10% of those in Latin America. By around the age of 34, the gap has closed, with more than 90% of men and women being parents, regardless of literacy levels or region. These findings are consistent with the literature that finds that education delays marriage and parenthood for men and women (Teachman and Polonko, 1988^[26]), and observations by Jonas and Thorn (2018^[21]) in the OECD.

Figure 3.22. Cumulative share of parents at a given age, by gender and literacy proficiency



Note: <L2 refers to those scoring below Level 2 for literacy skills; L2+ to those achieving Level 2 and above.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

As Figure 3.23 shows, there are strikingly higher rates of teenage pregnancy in LAC countries than in OECD countries, especially for women with low literacy proficiency. In Latin America, one in every six adults became a parent in their adolescent years, but only one in every twenty did so in the OECD. This is in line with data from Latin America and the Caribbean which show persistently high rates of adolescent pregnancies (UNFPA, 2013^[27]). Low reading skills appears to be an important mediator of adolescent pregnancy, with nearly 7 percentage points between those with low reading levels – scoring below Level 2 – and the rest. This is consistent with findings of Jonas and Thorn (2018^[21]) for the OECD. Teenage parenthood is also substantially more common among women than men: in LAC countries, 22% of women became parents in their teens, but only 8% of men. This could be due to a number of factors including a heightened presence of sexual and gender-based violence against girls and women in Latin America. Urban areas of Bolivia and Colombia stand out as places where adolescent pregnancy is less common, with adolescent parenthood rates among men which are comparable to OECD countries (Table 3.2).

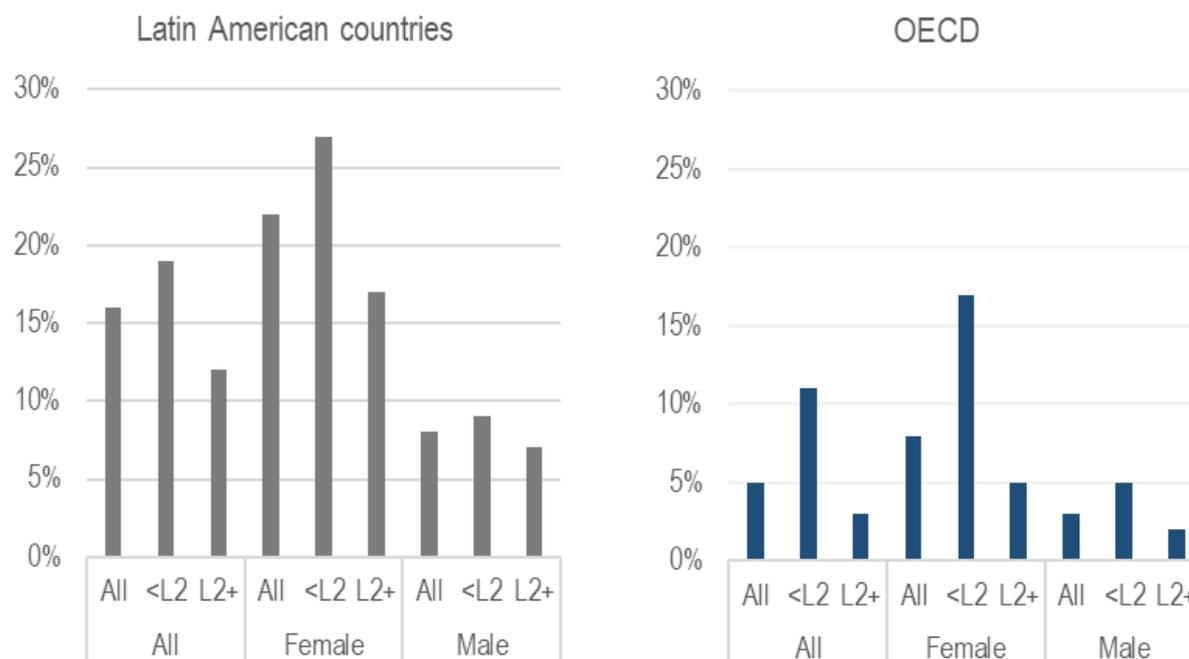
Table 3.2. Percentage of 20-65-year-olds who became parents in their teens, by literacy proficiency, gender and country

Country	All			Women			Men		
	all	<L2	L2+	all	<L2	L2+	all	<L2	L2+
Bolivia (Urban)	11	14	7	16	19	11	3	4	2
Chile	14	18	9	19	26	11	8	9	8
Colombia (Urban)	12	14	10	17	20	16	3	3	3
Ecuador	17	19	12	25	28	18	8	9	6
Mexico	17	20	14	24	28	19	9	11	8
Peru	15	17	8	22	26	13	7	8	4

Note: <L2 refers to those scoring below Level 2 for literacy skills; L2+ to those achieving Level 2 and above.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

Figure 3.23. Percentage of 20-65-year-olds who became parents in their teens, by literacy proficiency and gender



Note: <L2 refers to those scoring below Level 2 for literacy skills; L2+ to those achieving Level 2 and above.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

For young adults, educational enrolment is associated with a delayed start of parenthood. As can be seen in Table 3.3, the percentage of young adults who are parents is significantly lower among those enrolled in education. For instance, 16% of 16-19-year-olds who are not in education are parents, compared to 2% of those who are. The difference is particularly high for girls: 25% of those who are not enrolled are parents, compared with only 3% of those who are enrolled. The same patterns hold for OECD countries, although, as discussed earlier, parenthood levels overall are lower for younger age groups. Rates also vary between countries, ranging from 24% of out-of-school 16-19-year-olds being parents in Chile to 11% in urban Colombia, almost equal to the OECD average. While 39% of girls aged 16-19 who are out of school are parents in urban Bolivia, the figure is only 16% in urban Colombia – and around 4% in Germany and Singapore. It should be noted that the direction of the association between pregnancy and school enrolment is not clear: early pregnancy can be both the cause and the consequence of dropping out of education (Birchall, 2018^[28]). Research in Paraguay and Peru has found that adolescents who face challenges in school and who have low aspirations in life are more likely to become pregnant (Näslund-Hadley and Binstock, 2011^[29]).

Table 3.3. Percentage of 16-29-year-olds who are parents, by gender, age group and enrolment in education

	Age group	All		Women		Men	
		Not enrolled	Enrolled	Not enrolled	Enrolled	Not enrolled	Enrolled
LAC	16-19 years	16	2	25	3	7	0
	20-24 years	44	12	54	17	33	8
	25-29 years	65	32	74	37	55	27
OECD	16-19 years	11	1	17	1	5	0
	20-24 years	22	4	30	6	15	3
	25-29 years	40	16	48	21	31	12

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

As might be expected, not living with a partner is also associated with later parenthood. As can be seen in Table 3.4, the percentage of young adults who are parents is significantly lower among those who are not cohabiting. While more than half of 16-19-year-olds who cohabit in Latin America are parents, this falls to only 2% of those who do not. The percentage is higher for women: 65% of the cohabiters are parents, compared to 4% of those who do not live with a partner. Within the region, urban Bolivia and Chile are exceptional in that over 80% of those aged 16-19 who cohabit are parents (86% in urban Bolivia and 83% in Chile). In Bolivia, this is driven by teenage girls (93% of those aged 16-19 who cohabit are parents) while in Chile it is driven mostly by teenage boys (97% of those aged 16-19 who cohabit are parents). For those cohabiting in their 20s, the likelihood of being a parent does not rise very much with age. However, among those who do not cohabit, women become significantly more likely to be a parent (among 20-24-year-olds, 26% of women do not cohabit and are parents compared to 6% of men; among 25-29-year-olds the shares are 44% of women and 19% of men). This pattern also holds in OECD countries, but at a much lower scale. As with enrolment, cohabiting could be either the cause or the result of pregnancy at early ages. On the one hand, it is likely that the social stigma of being pregnant without a partner leads to social pressures to marry or cohabit. On the other hand, the onset of sexual relations and pregnancy tends to be accelerated when couples live together (Näslund-Hadley and Binstock, 2010^[30]).

Table 3.4. Percentage of 16-29-year-olds who are parents, by gender, age group and cohabitation status

	Age group	All		Women		Men	
		Not cohabiting	Cohabiting	Not cohabiting	Cohabiting	Not cohabiting	Cohabiting
LAC	16-19 years	2	57	4	65	1	39
	20-24 years	16	73	26	75	6	72
	25-29 years	31	89	44	90	19	87
OECD	16-19 years	1	45	1	51	0	32
	20-24 years	5	52	9	54	2	49
	25-29 years	12	64	19	68	7	60

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

Reading skills and family structure

Average household sizes are gradually declining almost everywhere (Bradbury, Peterson and Liu, 2014^[31]). Households remain slightly larger in Latin America than in the OECD, with the difference being greater among those with low reading skills. As Table 3.5 shows, the average number of children per household is 2.8 in the Latin American countries in the sample, and 2.2 amongst the OECD countries. Within Latin America, those with low reading skills had close to 3 children per household, while those with higher skills had close to 2.3. The differences in the number of children by gender are very small.

Martin and Juarez (1995^[32]) had previously documented important differences in household sizes amongst women with different educational levels in Latin America. Interestingly, they highlight that, despite the differentials in actual fertility, desired family size does not vary widely with educational level. Women with lower levels of education have lower contraceptive use, lower socio-economic status, and less knowledge and more fatalistic attitudes towards reproduction. They find that these cognitive, economic and attitudinal differences mediate the influence of schooling on reproductive behaviour and partly explain the fertility gap. In the OECD, the correlation between reading levels and number of children can be explained by the fact that more literate adults tend to have higher educational attainment, which in turn implies living with their partners and forming a family later than those with lower skills. In the OECD, Jonas and Thorn (2018^[21]) found that after controlling for respondents' educational attainment, the strength of the link between reading proficiency and number of children is negligible.

Table 3.5. Average number of children, by literacy proficiency, gender and country

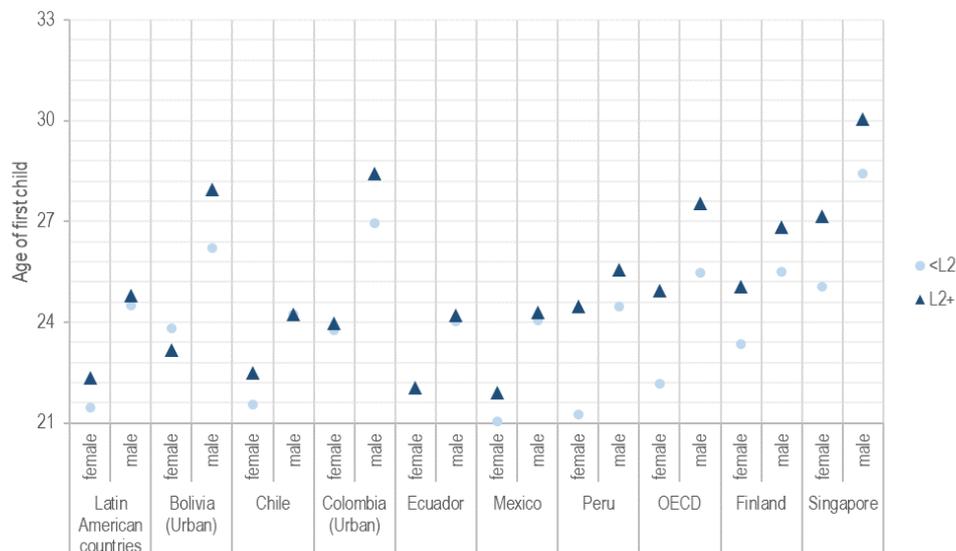
Country	All			Women			Men		
	All	<L2	L2+	All	<L2	L2+	All	<L2	L2+
LAC	2.6	2.9	2.3	2.6	2.9	2.2	2.6	2.8	2.3
Bolivia (Urban)	2.4	2.5	2.1	2.4	2.5	2.1	2.4	2.5	2.1
Chile	2.4	2.6	2.2	2.4	2.5	2.1	2.5	2.6	2.3
Colombia (Urban)	1.9	2.0	1.8	1.9	2.0	1.8	1.9	2.0	1.8
Ecuador	2.8	2.9	2.5	2.8	3.0	2.4	2.8	2.9	2.7
Mexico	2.7	2.9	2.4	2.7	3.0	2.3	2.7	2.9	2.4
Peru	2.2	2.6	2.1	2.2	2.6	2.1	2.2	2.5	2.1
OECD	2.8	3.0	2.2	2.8	3.0	2.2	2.8	3.0	2.3

Note: <L2 refers to those scoring below Level 2 for literacy skills; L2+ to those achieving Level 2 and above.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

As can be seen in Figure 3.24, in OECD countries, parenthood starts at a later age for those with higher reading levels, regardless of their gender. In Latin American countries, the difference in the average age of first parenthood between those with high and low reading levels seems to be smaller. Although surprising, the small association between reading and age of first child has been observed before. For instance, Parikh and Gupta (2001^[33]) also found that, in India, although literacy is a critical precondition to decreased fertility, it only reduced fertility in small percentage terms. Fort and colleagues (2016^[34]) studied compulsory schooling reforms in England and continental Europe between 1936 and 1975. They found a negative relationship between education and fertility in England, but no relationship between education and the number of children in the rest of Continental Europe.

Figure 3.24. Average age of becoming a parent, by literacy proficiency and gender



Note: <L2 refers to those scoring below Level 2 for literacy skills; L2+ to those achieving Level 2 and above.

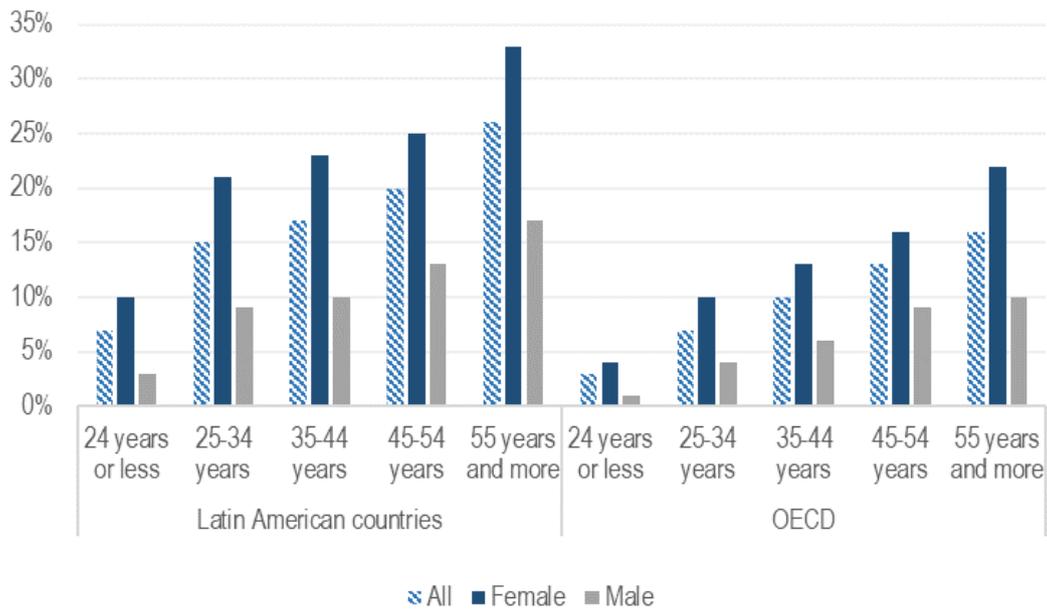
Sources: Authors' calculations using OECD (n.d.^[9]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

Reading skills and solo parenthood

Single- or solo-parent households are those headed by one parent who is responsible for one or more children. In these households, adults care for dependent children for whom they are financially responsible and have sole or shared custody. This increasingly common family arrangement too often has implications on the availability and allocation of time for family care activities. For instance, solo parents may have a more challenging time balancing work and household care activities, especially in the absence of reliable childcare opportunities. A single-family income might increase pressure to work and limit parents' time to help children with homework and the like. Also, some solo parents may have to work longer hours to make ends meet, making it difficult to pursue professional growth and development opportunities. Unfortunately, the PIAAC and STEP surveys do not include data on family configuration and custody agreements, or how much control parents had had over their family structure, including whether they had chosen to be solo parents.

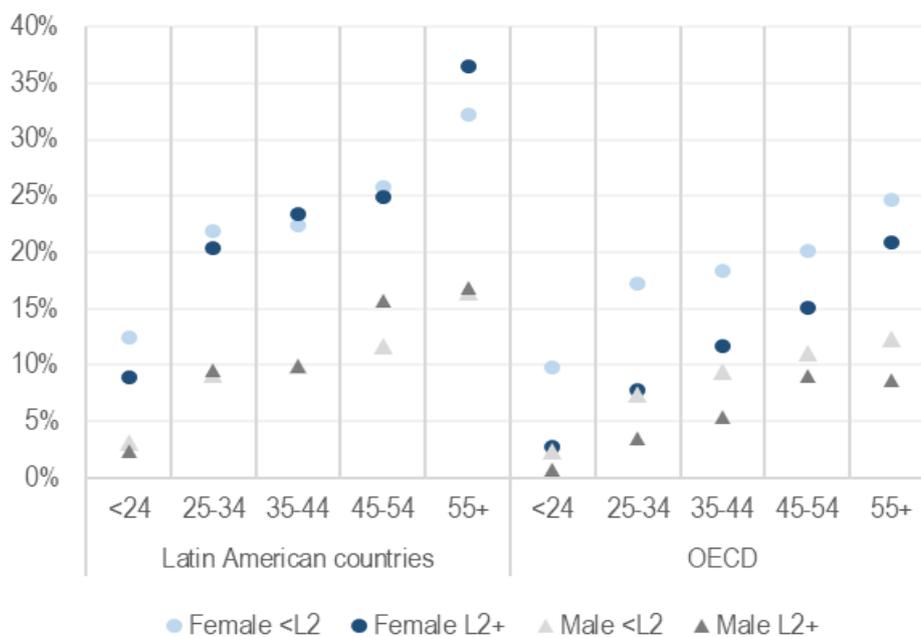
Like parenthood more generally, solo parenthood increases with age and is more common among women in both Latin America and the OECD. As can be seen in Figure 3.25, the difference in rates between genders is greater in Latin America than in the OECD. Urban Colombia has strikingly high differences in single parenthood between men and women: while 37% of 35-44-year-old women are single parents, the figure is only 2% for 35-44-year-old men. The pattern holds for other age brackets too: 9% of Colombian women and 0% of men are single parents among those aged 24 and under; 19% of women and 7% of men among 25-35-year-olds; 39% of women and 8% of men among 45-55-year-olds; and 35% of women and 12% of men among those aged over 55.

Figure 3.25. Percentage of 16-65-year-olds who are single parents, by gender and age group



Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

Figure 3.26. Percentage of 16-65-year-olds who are single parents, by literacy proficiency and gender



Note: <L2 refers to those scoring below Level 2 for literacy skills; L2+ to those achieving Level 2 and above.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

While solo parenting is less common amongst those with higher reading proficiency in the OECD, the pattern is less clear in Latin America. For instance, in Latin America 17% of those with literacy scores below Level 2 are solo parents compared with 14% of those with higher scores; in OECD countries these values are 14% and 8% respectively. Further, in Latin America, single parenting is more common amongst the less proficient below the age of 35, but more common among the more proficient after 45. This is not the case for the OECD, where solo parenting is more common among those with lower literacy levels regardless of age and gender. In both Latin American and OECD countries, however, the larger percentage of female single parents is associated with the fact that women with low reading skills tend to become parents earlier than those with higher skills (Jonas and Thorn, 2018^[21]).

Conclusion

Latin America has made substantial progress in closing gender gaps in school enrolment and basic reading proficiency. Data from the PISA surveys show girls performing at a par with or slightly above boys in reading performance. Socio-economic status is associated with skills proficiency, with students from low-income households scoring lower in reading compared to more affluent households. Girls' relative advantage in reading performance holds steady even in low-income households. Data from the PISA surveys serve to disentangle some of the factors that may be prompting girls' better performance, including enjoyment of studying and reading. Moreover, the analysis confirms long-standing evidence on the positive impact that parental education and expectations have on their offspring's own expectations and outcomes.

Interestingly, girls' relative skills advantage at age 15, and their self-reported high expectations about their education and labour market aspirations, are not reflected in labour-market outcomes. Although data from the PIAAC and STEP skills measurement surveys show that an equally large proportion of adult men and women are not able to meet basic reading skill standards, women fare relatively worse in the labour market, particularly in earnings, in nearly all countries and at all levels. Young women go through an educational and occupational sorting that leads them to sectors and occupations that are less lucrative than those chosen by men. Although this is a function of a combination of variables, including economic, social, cultural, information and societal biases, as well as gender violence, to name a few, this chapter finds that adolescent pregnancy and early unions may be important factors holding young women back from fulfilling their educational and professional aspirations.

Moving forward, it will be vital to identify targeted programmes to support young women as they make their education choices and transition into the labour market, as well as those from disadvantaged and vulnerable households. While it is important to sustain the improvements in girls' and young women's skills, on its own, the data in this paper suggest that will not be enough to change the narrative for women. There is still potential to shift societal mindsets about women's limited roles in society, ban early unions, curb adolescent pregnancy, and eliminate gender-based violence against girls and women, especially in education and labour-market spaces.

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Annex 3.A. Countries represented per survey and percentage of adults living with a partner

Annex Table 3.A.1. Countries represented per survey

Countries for each survey	PISA	PIAAC	STEP
Argentina	x		
Bolivia	x		x (urban, 2012)
Brazil	x		
Chile	x	x	
Colombia	x		x (urban, 2012)
Costa Rica	x		
Dominican Republic	x		
Ecuador		x	
Mexico	x	x	
OECD	x	x	
Panama	x		
Peru	x	x	
Uruguay	x		

Note: Bolivia and Colombia participated in STEP in 2012. Only urban areas were surveyed.

Annex Table 3.A.2. Percentage of 16-65-year-olds living with a partner, by literacy level, gender, age group and country

Country	Age group	All		Female		Male	
		<L2	L2+	<L2	L2+	<L2	L2+
LAC	All	61	49	60	49	62	49
	16-24	28.55	15.47	33.5	19.14	23.43	11.69
	25-34	62.8	54.53	64.14	56.26	61.33	52.73
	35-44	74.46	72.19	71.23	68.02	78.08	76.83
	45-54	73.9	71.39	69.54	68.68	79	74.25
	55+	68.79	66.37	62.81	56.45	75.83	77.56
Bolivia (Urban)	All	52	34	57	37	46	30
	16-24	13.62	6.95	20.13	9.87	6.6	3.37
	25-34	65.36	42.93	67.18	49.78	61.86	33.77
	35-44	76.73	62.25	77.28	60.15	75.49	64.2
	45-54	72.73	80.36	72.93	79.91	72.33	80.94
	55+	63.96	66.21	54.32	53.8	76.16	79.23
Urban Colombia (Urban)	All	55	43	52	43	60	42
	16-24	25.35	15.15	29.31	19.98	20.29	8.71
	25-34	71.54	53.5	73.21	60.62	68.9	44.9
	35-44	65.32	64.59	55.51	54.89	82.35	77.3
	45-54	57.22	63.52	49.87	53.48	75.6	76.05
	55+	58.06	60.89	53.57	54.56	65.57	75.01
Ecuador	All	59	47	59	48	59	47
	16-24	24.65	11.91	30.85	16.59	18.32	7.32
	25-34	63.14	52.58	65.05	59.44	60.98	45.61

Country	Age group	All		Female		Male	
		<L2	L2+	<L2	L2+	<L2	L2+
	35-44	74.34	71.98	73.1	68.95	75.72	75.82
	45-54	74.02	74.97	70.12	64.91	78.45	83.75
	55+	65.1	68.36	56.73	56.75	73.47	80.52
Mexico	All	64	53	63	53	66	52
	16-24	34.54	18.07	37.69	21.92	31.29	14.29
	25-34	63.72	58.39	64.96	58.05	62.39	58.77
	35-44	75.83	75.05	72.39	72.5	79.57	78.01
	45-54	77.8	73.8	74.59	74.16	81.33	73.38
	55+	70.31	66.91	66.17	56.32	75.22	78.46
Chile	All	59	46	58	43	60	48
	16-24	20.29	10.27	26.59	11.6	14.32	8.95
	25-34	54.08	46.79	55.61	49.42	52.43	44.61
	35-44	71.18	71.15	69.7	62.59	72.82	78.54
	45-54	66.88	62.82	64.93	56.43	69.09	68.97
	55+	70.48	66.46	63.77	59.06	78.23	72.47
Peru	All	58	38	57	35	59	40
	16-24	21.23	9.27	29.58	11.71	13.15	6.91
	25-34	61.1	41.43	61.74	42.85	60.42	40.22
	35-44	73.85	61.17	71.27	52.29	76.64	68.07
	45-54	73.46	70.51	67.99	62.15	79.18	78.07
	55+	69.84	69.33	59.47	58.32	81.08	78.65
OECD	All	61	49	66	62	64	60
	16-24	25.45	10.56	30.07	13.54	21.11	7.65
	25-34	61.6	56.17	66.14	62.12	57.05	50.24
	35-44	73.99	77.98	74.12	78.38	73.85	77.56
	45-54	74.09	79.84	74.02	78.6	74.16	81.14
	55+	73.81	79.22	70	73.52	78.13	84.97
Finland	All	84	81	87	81	81	81
	16-24	22.86	29.38	39.42	34.61	8.2	24.34
	25-34	87.57	90.57	86.69	90.75	88.32	90.37
	35-44	86.33	90.27	90.86	87.52	80.95	93.04
	45-54	94.03	91.39	93.33	89.47	94.93	93.38
	55+	91.44	94.94	93.12	92.76	89.8	97
Germany	All	73	74	72	75	74	74
	16-24	13.64	13.69	18.28	19.27	7.5	8.16
	25-34	72.62	74.74	74.02	79.14	71.2	70.24
	35-44	75.53	89.79	74.89	87.77	76.32	91.91
	45-54	86.64	90.59	86.61	87.97	86.68	93.4
	55+	87.23	94.04	81.84	90.92	94.2	96.88
Singapore	All	71	55	72	53	71	57
	16-24	8.3	2.45	11.06	2.85	5.99	2.03
	25-34	65.5	46.28	76.31	50.94	49.34	41.55
	35-44	77.52	78.4	78.39	76.7	76.26	80.01
	45-54	77.43	80.58	79.48	75.2	75.28	85.5
	55+	72.98	78.11	67.12	65.75	79.52	89.6

Note: <L2 refers to those scoring below Level 2 for literacy skills; L2+ to those achieving Level 2 and above.

Sources: Authors' calculations using OECD (n.d.^[8]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/ for Chile, Ecuador, Mexico and Peru, and World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step> for Bolivia and Colombia.

Notes

¹ In this chapter, Chile, Colombia, Costa Rica and Mexico were not included in the statistics for OECD countries.

² PISA results are scaled to fit approximately normal distributions, with means around 500 score points and standard deviations around 100 score points. In statistical terms, a one-point difference on the PISA scale therefore corresponds to an effect size (Cohen's d) of 0.01 and a 10-point difference to an effect size of 0.10.

³ The economic, social and cultural status index (ESCS) is a composite measure that combines into a single score the financial, social, cultural and human capital resources available to students (OECD, 2019_[41]).

⁴ The statistics for Latin America were calculated using the average number of years of education in the pooled data.

⁵ Reading literacy is defined as the ability to understand, evaluate, use and engage with written texts to participate in society, achieve one's goals, and develop one's knowledge and potential" (OECD, 2016_[39]).

⁶ At Level 2 respondents are required to make matches between the text and information and may require paraphrase or low-level inferences. Some competing pieces of information may be present. Some tasks require the respondent to cycle through or integrate two or more pieces of information based on criteria, compare or reason about information requested in the question, or navigate within digital texts to access and identify information from various parts of a document. Refer to PIAAC and STEP documentation prepared by the Education Testing Service for more details on the classification of reading scores using PIAAC and STEP data (World Bank, 2015_[37]).

⁷ The International Labour Organization estimates that the average informality rate between 2017 and 2019 is around 50% in Latin America. Informality is defined as a lack of access to social protection because of the labour relationship (ILO, 2021_[35]).

⁸ STEP defines informal workers as 1) individuals who are currently working and reported not having social security or benefits; 2) individuals who reported being unpaid workers on family businesses; or 3) individuals who reported being self-employed and were the sole employee of their business.

⁹ Since the reading skill measure is standardised to (0,1), the parameter of interest can be interpreted as the percentage increase in earnings associated with a one-standard-deviation increase in measured skills.

¹⁰ PIAAC uses the International Standard Classification of Occupations (ISCO). Groups 7-9 are low-skilled occupations, groups 4 and 5 are medium-skilled, and groups 1-3 high-skilled.

¹¹ Occupations are defined by two-digit ISCO groups.

¹² Science and engineering, health, and teaching professionals are identified as ISCO codes 21, 22 and 23, respectively.

¹³ We follow OECD (2016_[38]) and define qualification mismatch as the difference in the educational attainment that the person has and that that is required by their job. In PIAAC workers are asked what the usual qualifications would be, if any, "that someone would need to get (their) type of job if applying today". The answer to this question is used as each worker's qualification requirements and then compared to their actual qualifications to identify mismatch. Thus, a worker is classified as overqualified when the difference between his or her qualification level and the qualification level required in his or her job is positive. A worker is classified as underqualified when the difference between his or her qualification level and the qualification level required in his or her job is negative.

¹⁴ Mother's level of education is a measure of family background correlated with both father's education and family income (Lundberg, 2013_[36]).

¹⁵ The only exceptions are those aged over 55 in Peru and in Singapore.

4 Skills and economic outcomes in Latin America

Education and skills are key factors in the effort to create skill-intensive and higher value-added economies, which could help Latin American countries escape the "middle-income trap". Economies in the region have fewer workers employed in high value-added sectors or occupations requiring high levels of skills than in OECD countries. In the long term, investment in improving the quality of the education system will be key to improved growth, but investment in adult training is also needed to help those already in the labour market. Despite reported levels of on-the-job training among Latin American workers, the region lags behind in organised adult training and learning activities. This is largely because of much lower participation rates among self-employed and informally employed workers, and among those working in industries with low levels of research and development (R&D) intensity, both of which form a much larger share of the workforce than the OECD average.

Introduction

The purpose of this chapter is to investigate the role that education and skills can play in fostering economic growth in Latin America. Most Latin American countries are middle-income countries that are struggling to shift their economic structures towards more skill-intensive and higher value-added activities, which would allow them to position themselves better in global value chains. Previous analysis conducted by the OECD (OECD/CAF/ECLAC, 2014^[1]) already highlighted education and skills as key factors in promoting more dynamic and inclusive growth and escaping the so-called “middle-income trap”, characterised by economic stagnation and the inability to complete the process of convergence with the most developed economies.

The chapter draws on data from the Survey of Adult Skills, a component of the Programme for the International Assessment of Adult Competencies (PIAAC). These data provide new insights and strengthen the results of previous analysis as they contain precise measures of the cognitive skills (literacy and numeracy) of the adult population, as well as a wealth of information on how skills are used in the workplace and the actual tasks workers engage with in their jobs. Four Latin American countries have participated in PIAAC to date: Chile in 2014-15, and Ecuador, Mexico and Peru in 2017. In-depth results from those two rounds of data collection, including a detailed portrait of adults’ proficiency in literacy, numeracy and problem-solving in technology-rich environments, were published in OECD (2016^[2]) and OECD (2019^[3]).

In 2012, Bolivia and Colombia took part in the World Bank Skills Towards Employability and Productivity (STEP) programme, a household survey that contained an assessment of literacy comparable with the one administered in PIAAC (Pierre et al., 2014^[4]). This chapter includes results from the STEP programme, although care must be taken in comparing data from the two surveys. STEP was only administered in urban areas, and its results are therefore not fully comparable with PIAAC because they are not representative of the entire adult population living in the participating countries. For an in-depth discussion of the differences between PIAAC and STEP, see Keslair and Paccagnella (2020^[5]).

This chapter is structured as follows. First, it presents data on the economic structure of the Latin American countries that participated in PIAAC and STEP. It shows that a relatively small share of workers are employed in knowledge-intensive occupations and industries for which high levels of skills are required. This might be either due to limited demand for skilled workers, or to constraints in the supply of skills that prevent the creation of more high-skilled jobs. To shed light on which of the two explanations is more likely to apply, the chapter then looks at how skills and education are rewarded in the labour market, as high returns to skills would signal tensions between demand and supply. Finally, the chapter looks at the extent to which adults engage in lifelong learning and training activities, which are important policy levers for updating and upgrading the skills of people who are now too old to go back to formal education.

Low levels of skills as a constraint on economic development

One reason for the inability of Latin American countries to escape the middle-income trap is the difficulty in transitioning to an economic structure featuring more innovative and high value-added industries and jobs. This section therefore looks at the economic structure of Latin American countries that participated in PIAAC and STEP. It examines the prevalence of different types of industries and occupations, drawing on unique information about the actual tasks performed on the job to highlight how the skills content of similar jobs can differ between countries. Finally, the analysis considers another important structural characteristic of Latin American economies: the pervasiveness of the informal sector.

Research and development (R&D) activities are a particularly important ingredient in the transition towards higher economic development, as they lead to innovations that increase productivity and allow countries to position themselves higher up in global value chains, thus capturing a larger share of value-added. OECD/CAF/ECLAC (2014^[1]) already noted that in Latin American countries the share of gross domestic

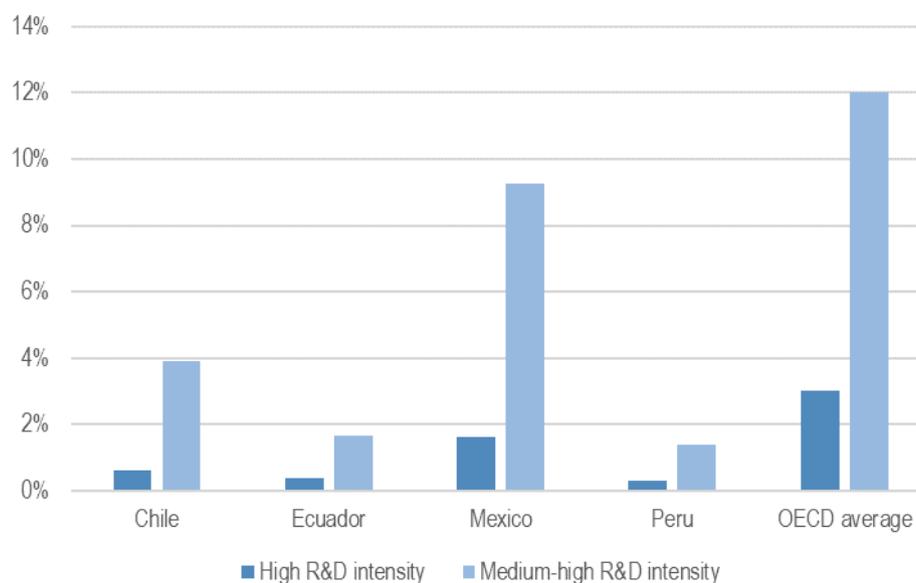
product (GDP) devoted to investments in R&D between 1990 and 2010 remained low compared to other regions. Moreover, it noted how in Latin America, in contrast to most other developed countries, the lion's share of R&D investment is done by the public, rather than by the private sector.

Data from PIAAC confirm this picture, although indirectly, and also provide evidence suggesting that insufficient levels of skills are an important constraint to scaling up investments in R&D. PIAAC data do not contain direct information on R&D activities, but contain detailed information on respondents' jobs, which can be used to codify them using international classifications of either occupation or industry.

Industries can then be classified according to their R&D intensity: Galindo-Rueda and Verger (2016^[6]) propose a taxonomy based on the ratio between investment in R&D and value-added, using balance-sheet data from 27 OECD countries and 2 partner economies. The taxonomy divides manufacturing and non-manufacturing industries into five categories: high, medium-high, medium, medium-low and low R&D intensity. For example, the high R&D intensity category includes the air and spacecraft industries, pharmaceuticals, and computer manufacturers, as well as software publishing firms (from the non-manufacturing sector). At the bottom of the scale (low R&D intensity) there are only non-manufacturing industries: accommodation and food services, waste management, electricity supply, agriculture, and construction and real estate activities.

The skills requirements in the different industries can be assessed by the average literacy proficiency of adults employed in those industries. On average across OECD countries participating in PIAAC (excluding Latin American countries), workers in high and medium-high R&D intensity industries score around 290 points on the PIAAC literacy scale, which is about 20 points (or half of a standard deviation) higher than the overall OECD average. The average literacy scores of workers in other industries are significantly lower: 271 score points in the medium R&D intensity category, 282 in the medium-low category and 274 in the low category. In Latin American countries participating in PIAAC, the share of employment in industries with high and medium-high R&D intensity is significantly lower than in the average OECD country (Figure 4.1).

Figure 4.1. Share of employment among 25-54-year-olds in R&D-intensive industries



Note: The sample is restricted to adults aged 25-54, in employment. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

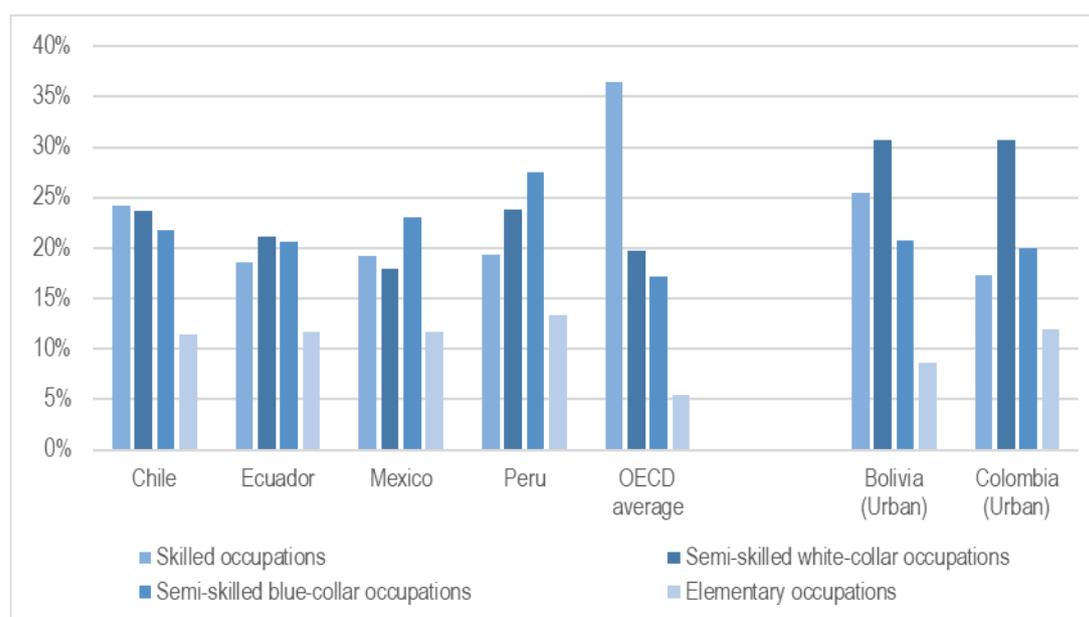
Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/.

While the industrial structure is a useful indicator of an economy's potential to generate value and undertake a sustained growth path, industries are defined in terms of the output they produce rather than in terms of the activities workers engage in, and so they necessarily bundle together jobs requiring different types and levels of skills. Occupations are defined as a bundle of tasks that a worker must complete, and as successful completion of such tasks normally require a more precise set of skills, occupations rather than industries are probably a better level of analysis to investigate demand for skills in an economy.

The International Labour Organization (ILO) classifies occupations on the basis of their required skill level and skill specialisation using the International Standard Classification of Occupations (ISCO). Skill level is “a function of the complexity and range of tasks and duties to be performed in an occupation”, while skill specialisation is considered in terms of the field of knowledge required, the tools and machinery used, the materials worked on or with, and the kinds of goods and services produced (ILO, 2012^[8]). At the highest level, occupations are classified in four groups: skilled occupations, semi-skilled white-collar occupations, semi-skilled blue-collar occupations and elementary occupations. Skilled occupations include managers and professionals while semi-skilled white-collar jobs include clerks and service and sale workers. Semi-skilled blue-collar workers include craft workers and skilled agricultural workers, while elementary occupations include cleaners, street vendors, and labourers in agriculture, transport or construction.

As expected, differences in skills requirements between different occupations (using the average literacy scores of adults working in those jobs as a proxy) are much more pronounced than was the case for industries: across OECD countries participating in PIAAC (and excluding Latin American countries), the average literacy proficiency of workers in skilled occupations is 294 points, falling to 243 points in elementary occupations. Average literacy proficiency for those in semi-skilled occupations is 270 points in white-collar jobs and 258 points in blue-collar jobs. Figure 4.2 shows that in Latin American countries much smaller shares of the adult population are employed in skilled occupations, and much larger shares in elementary occupations, than in the average OECD country.

Figure 4.2. Share of employment among 25-54-year-olds, by occupation classification

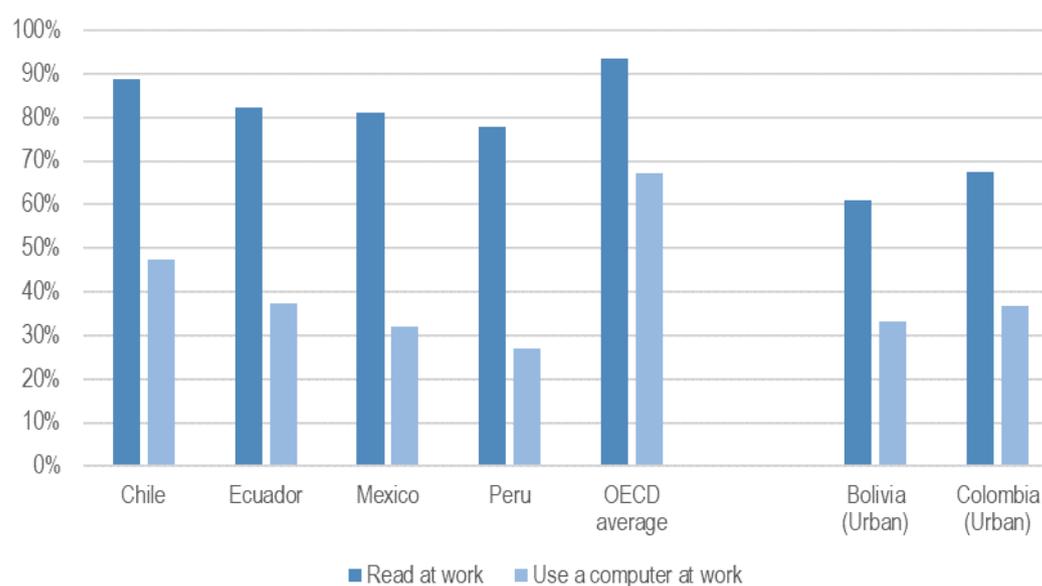


Note: The sample is restricted to adults aged 25-54. Data for Bolivia and Colombia only refer to the adult population living in urban areas. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/; World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step>.

To classify occupations in an internationally comparable way, as done by the ILO, some assumptions need to be made, which inevitably means simplifying a reality that is much more complex. Occupations are therefore defined as a “set of jobs whose main tasks and duties are characterized by a high degree of similarity” (whereby jobs are “a set of tasks and duties performed, or meant to be performed, by one person”). In reality, there is ample evidence of substantial variability in the actual tasks carried out by workers working in the same occupation (Autor and Handel, 2013^[10]). This is because “jobs”, which are just a collection of tasks, are shaped by the particular match between the skills and capabilities of the workers doing them, and the technological and organisational capital of the firm where they work. One of the distinctive features of PIAAC (and of STEP, although to a lesser extent) is that it collects information about the frequency with which workers undertake certain tasks at work. This information can be used to gain more insights about how jobs are organised, and about the type of skills that are required of adults on the workplace.

Figure 4.3. Share of 25-54-year-old workers who need to read or use a computer at work



Note: The sample is restricted to adults aged 25-54, in employment. Data for Bolivia and Colombia only refer to the adult population living in urban areas. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

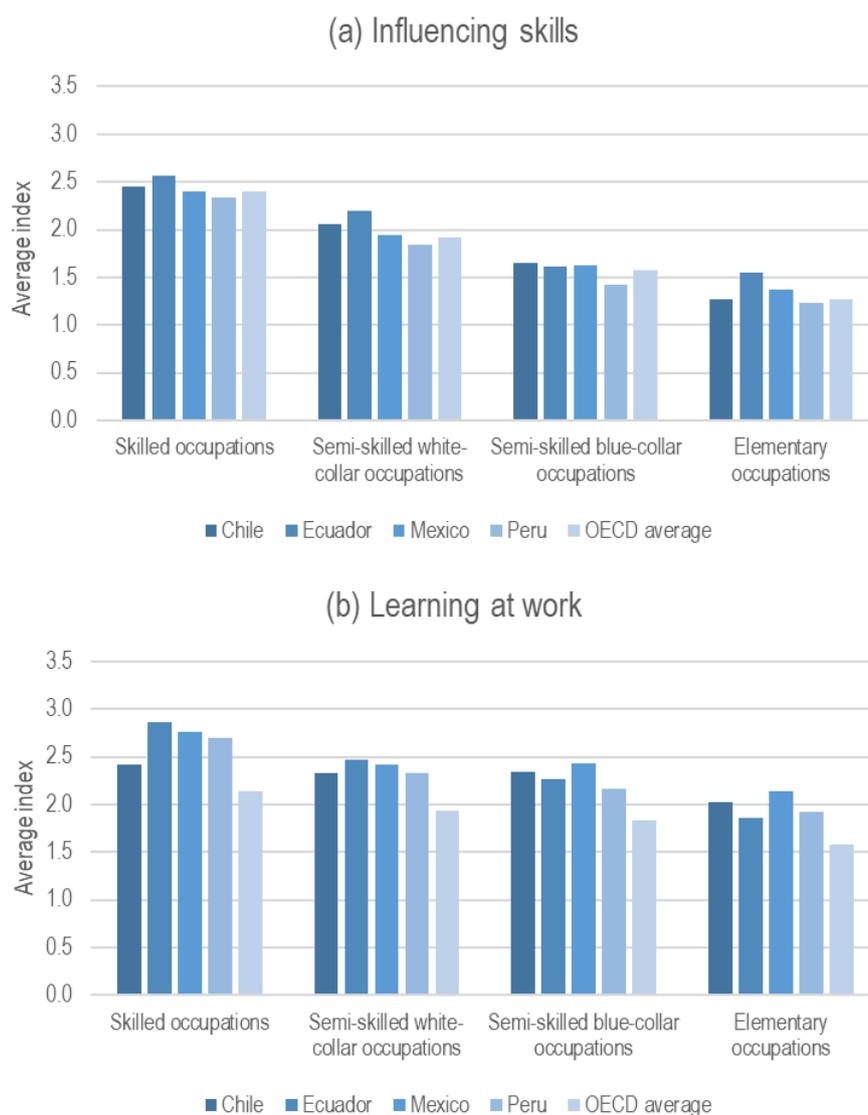
Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/; World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step>.

Figure 4.3 displays the share of workers who need to read or use a computer in their work. Reflecting the differences in the occupational structures discussed above, the share of workers engaging in such activities is lower in Latin American countries than on average across the OECD, especially as far as computer use is concerned.

These two rough measures of skills use at work, however, are not sufficient to draw an accurate picture of what workers do in their jobs. PIAAC contains a battery of other questions about tasks performed on the job, which allow indices to be constructed measuring the degree of engagement in tasks requiring both information-processing (or cognitive) skills and other generic skills (often called non-cognitive or socio-emotional skills). Information-processing skills include reading, writing, numeracy, information and communications technology (ICT) (based on the frequency of use of a wide range of software), and problem solving. Generic skills include task discretion (whether workers are able to choose the sequence

or the speed at which they perform tasks), learning at work, influencing skills (when dealing with colleagues or customers), co-operative skills, self-organising skills, physical skills, and dexterity. Indices have been derived to capture the degree of involvement in these activities. All indices are standardised to have a mean value of 2 and a standard deviation of 1 across all countries participating in PIAAC. For more information about how such indices are constructed, the reader is referred to OECD (2019^[11]).

Figure 4.4. Intensity of use of generic skills at work



Note: The sample is restricted to adults aged 25-54, in employment. The reported index of intensity of skills use is derived from questions about the frequency at which workers perform certain tasks on the job. The index is scaled so as to have a mean value of 2 and a standard deviation of 1. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

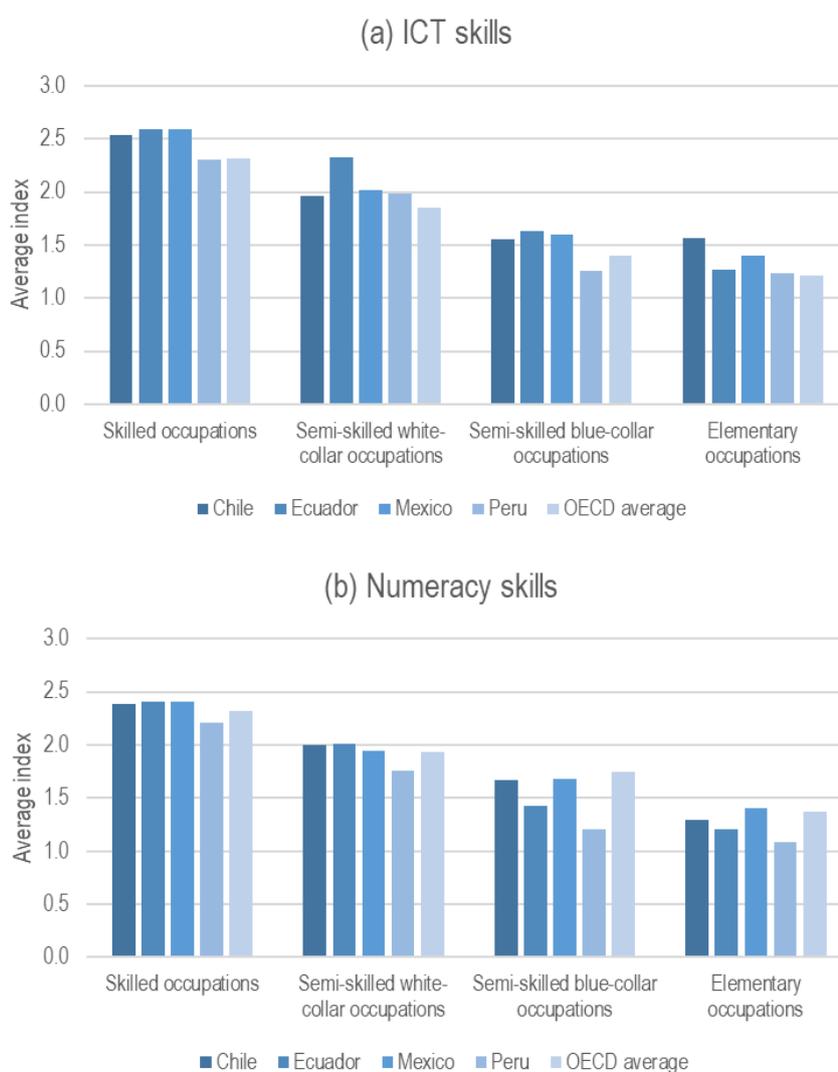
Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/.

Figure 4.4 and Figure 4.5 illustrate the intensity of use of two generic and two information-processing skills (or, more precisely, the frequency of engagement with certain tasks), within the four different types of occupation analysed above. Interestingly, according to these metrics, jobs in Latin American countries do

not seem to differ much from jobs in OECD countries on average. If anything, workers in Latin American countries engage to a greater extent in tasks involving instructing, teaching or training people; making speeches or presentations; selling products or services; advising people; and persuading or influencing others – all activities that require influencing skills. Similarly, they report that they have to engage in learning-by-doing, or in keeping up to date with new products of services more frequently than on average in OECD countries.

As far as information-processing skills are concerned, although a lower share of workers in Latin American countries use a computer at work (Figure 4.3), those that do so engage with a wide range of computer software and applications at similar rates to the average across OECD countries, for all types of occupations. Similarly, they engage at similar frequencies with tasks drawing on their numeracy skills. The picture for the use of reading and writing skills (not shown here) deliver very similar results.

Figure 4.5. Intensity of use of information-processing skills at work



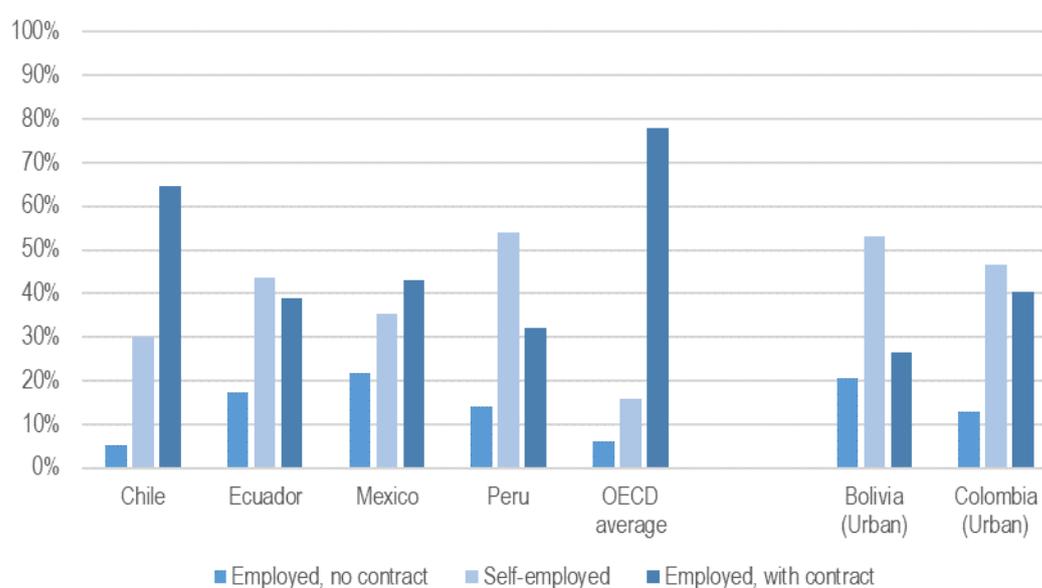
Note: The sample is restricted to adults aged 25-54, in employment. The reported index of intensity of skills use is derived from questions about the frequency at which workers perform certain tasks on the job. The index is scaled so as to have a mean value of 2 and a standard deviation of 1. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/.

Despite differences in their economic structures, OECD and Latin American countries do not appear to differ very much, in terms of sectoral and occupational composition, in the tasks performed by (and the skills required of) workers. On the one hand, this could be seen as a positive thing, as it provides workers with the incentive to acquire the skills that will be demanded on the job. On the other hand, it could be problematic to the extent that results from PIAAC highlight that adults in Latin America have lower proficiency in literacy, numeracy and problem-solving than adults in other participating countries (see Chapter 1). As a consequence, workers in Latin America might not be fully equipped to adequately meet the demands of their jobs. This could be one of the reasons behind the large gap between demand for and supply of skills highlighted in OECD/CAF/ECLAC (2014^[11]). According to that report, this gap is one factor behind the high degree of labour-market informality observed in Latin America.

The high incidence of informal labour markets is indeed also evident looking at data from PIAAC and STEP. In order to identify workers in the informal economy, the PIAAC and STEP questionnaires ask workers who report working as employees whether or not they have a formal labour contract. This provides a first approximation of the size of the informal sector.

Figure 4.6. Share of employment among 25-54-year-old workers, by employment status



Note: The sample is restricted to adults aged 25-54, in employment. Data for Bolivia and Colombia only refer to the adult population living in urban areas. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/; World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step>.

Figure 4.6 clearly shows how Latin American countries (with the partial exception of Chile) are characterised by larger shares of workers who have no formal employment contract, or are self-employed. In the case of self-employed workers, it is not possible to tell whether or not they work in the formal or in the informal sector. However, both self-employed workers and those without a formal employment contract are most likely have a lower degree of social protection. Information on earnings collected in the PIAAC and STEP questionnaires, can be used to show that workers who do not have a formal contract incur a wage penalty: compared to workers with a regular contract, hourly wages in the informal sector are 60% lower in Colombia; 35% lower in Bolivia, Mexico and Peru; and 25% lower in Ecuador. In Chile and in OECD countries, where a much lower share of workers are employed in the informal sector, these wage

penalties are much smaller: 2% in Chile and 4% on average across the OECD. Moreover, both in Latin America and in OECD countries, workers in the informal economy tend to work fewer hours in a typical week. In Latin America this is also true for self-employed workers (while in OECD countries self-employed workers work on average four hours more per week than employees with a formal contract).

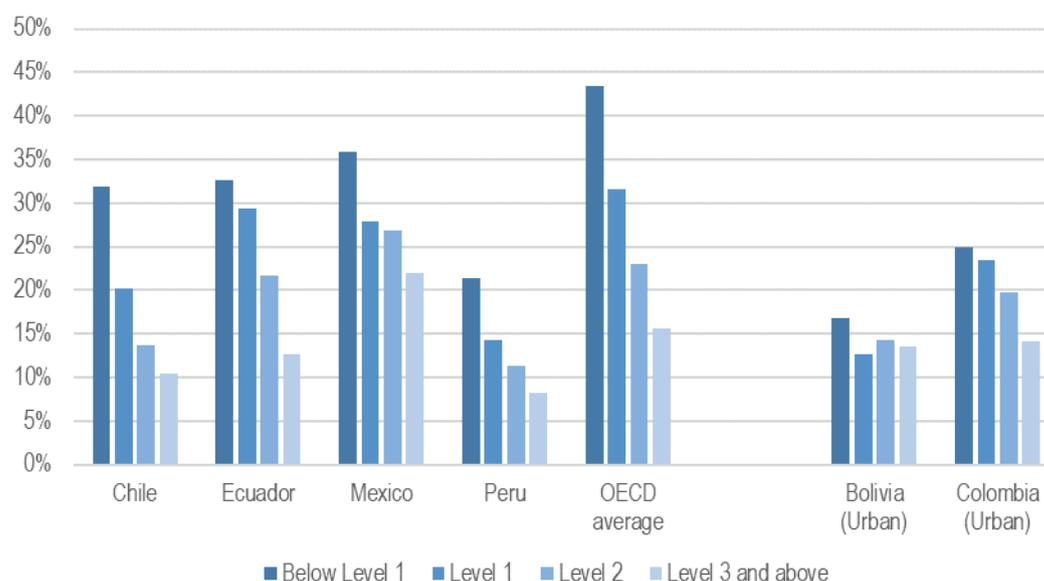
Individual returns to education and skills

If low levels of skills are a constraint to economic development, in the sense that they are preventing the creation or expansion of firms in more remunerative sectors, this should be reflected in higher returns for the relatively few individuals who do possess skills in high demand.

OECD/CAF/ECLAC (2014^[11]) notes how employers in Latin America are more likely than those in more advanced OECD economies to report that they struggle to find workers with high enough skills. At the same time, educational attainment has increased significantly in the past decades, so that the gap with respect to advanced economies in terms of the share of the population with secondary or tertiary education has significantly narrowed. This increased supply of educated workers might be one factor behind observations that returns to education have decreased, although it is a bit at odds with the observation that many firms struggle to find adequately skilled workers.

Data from PIAAC and STEP can help to shed some light on this issue, as their assessments of adults' proficiency in literacy, numeracy and problem solving can be used as a proxy for the quality of the formal education received by adults. OECD (2019^[31]) has already shown that the performance of adults living in Latin American countries was consistently lower than in the average OECD country for each completed level of schooling.

Figure 4.7. Share of 25-54-year-olds out of employment, by levels of literacy proficiency



Note: The sample is restricted to adults aged 25-54. Adults out of employment are all adults who do not report having been in employment in the reference week: they could be either unemployed or out of the labour force. Data for Bolivia and Colombia only refer to the adult population living in urban areas. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

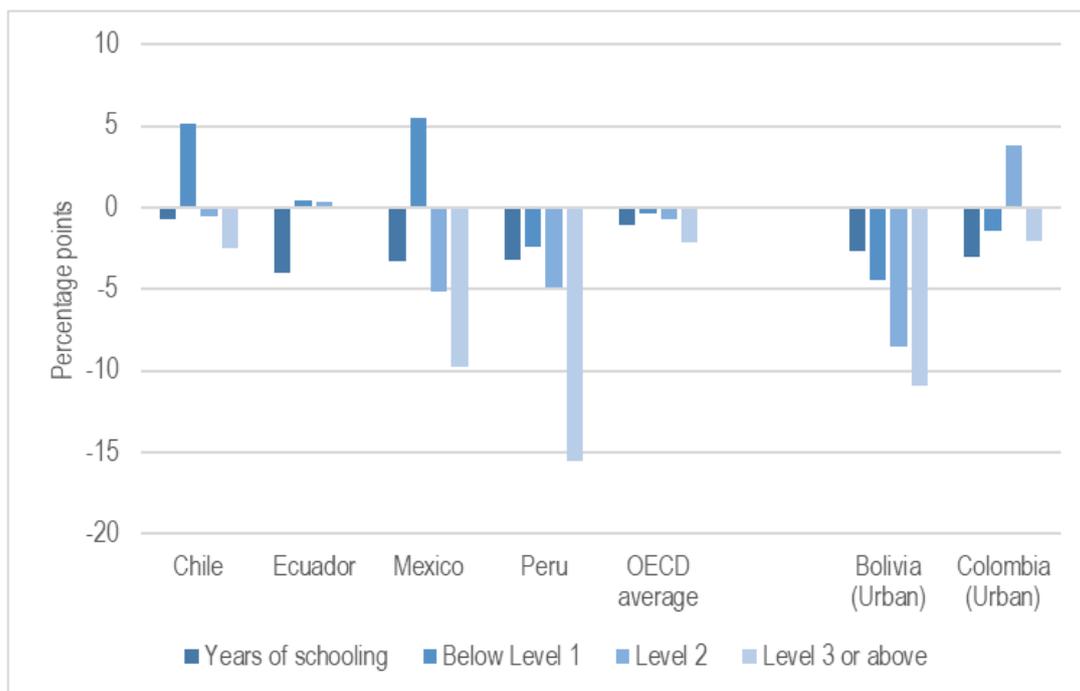
Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/; World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step>.

Low levels of skills do not seem to keep adults out of employment. Employment rates are normally higher in Latin American countries than in more advanced OECD economies, and this is true irrespective of the level of proficiency in literacy. Figure 4.7 shows that the difference in the probability of not being in employment between adults scoring at Level 3 or above in literacy and adults scoring below Level 1 is higher in the average OECD country than in Latin American countries participating in either PIAAC or STEP.

The low returns to literacy skills in terms of employment rates are likely to be linked to the low degree of social protection and the high prevalence of the informal economy in Latin America. These tend to favour the creation of low-quality jobs, often characterised by low levels of productivity and poor working conditions.

Although literacy proficiency is not closely related to the probability of being employed, it does appear to be linked to the type of jobs adults have access to. Figure 4.8 displays the results from a series of linear regressions of the probability of being employed without a formal contract on measures of human capital, in particular levels of literacy proficiency (the omitted category in this case being Level 1) and years of completed formal education (asked of PIAAC and STEP respondents). The regression also controls for gender, parental education, age and age squared. In Mexico, Peru and urban Bolivia, adults scoring at Level 3 or above in literacy have a much lower probability (between 10 and 15 percentage points) of being employed in the informal sector than adults scoring at Level 1. In Ecuador and urban Colombia, the only significant effect seems to come from additional years of schooling. In Chile and OECD countries overall, where informal employment is much less widespread, literacy skills and education do not appear to be strongly related to the probability of working in the informal sector.

Figure 4.8. Years of schooling, literacy and the probability of working in the informal sector

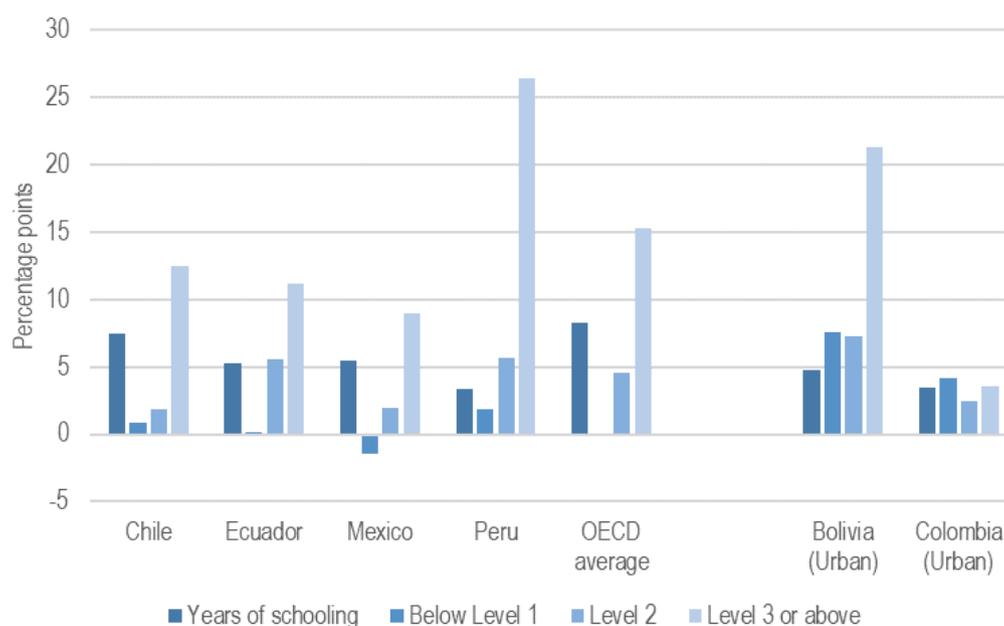


Note: The sample is restricted to adults aged 25-54, in employment. Data for Bolivia and Colombia only refer to the adult population living in urban areas. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

Source: OECD (n.d.[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/; World Bank (n.d.[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step>.

A stronger association is found between years of schooling, literacy proficiency and the probability of working in a skilled occupation, as defined by the ILO. Figure 4.9 shows the results of a similar regression, where the dependent variable is whether the respondent is employed in a skilled occupation. In all countries, both literacy proficiency and years of schooling are positively associated with the chance of being employed in a skilled occupation. For literacy proficiency, the relationship is particularly strong in Peru and Bolivia, where adults scoring at Level 3 or above are about 25 and 20 percentage points more likely to be employed in a skilled occupation than adults scoring at Level 1.

Figure 4.9. Years of schooling, literacy and the probability of working in a skilled occupation



Note: The sample is restricted to adults aged 25-54, in employment. Data for Bolivia and Colombia only refer to the adult population living in urban areas. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/; World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step>.

Ultimately, as skills are related to better occupational outcomes, they also lead to higher wages. Table 4.1 shows the results of a series of Mincerian wage regressions, where the dependent variable is always the logarithm of hourly wages. It presents three regression models, all of which include gender, age, age squared and parental education. Model 1 additionally controls for years of schooling, Model 2 controls for levels of proficiency in literacy and Model 3 controls for both.

Looking jointly at Model 1 and 2 lends support to the idea that the observed decline in returns to schooling is partly due to the lower quality of the additional education younger cohorts have been able to acquire. Across Latin America, returns to education are broadly in line with the OECD average (about 7% for each additional year of schooling). However, returns to literacy skills, which are likely to be in shorter supply in Latin America, are much higher: close to 50% in most Latin American countries, while averaging 34% in OECD countries.

When controlling for both years of schooling and literacy proficiency in Model 3, returns to schooling are mostly unchanged, while returns to literacy decrease substantially and converge towards the OECD average (with the exceptions of Peru, when they remain much higher, and Bolivia, where they are much lower). In other words, in Latin American countries a larger part of the variation in literacy proficiency is

captured by variation in years of schooling, while schooling provides distinctive skills, on top of literacy, that remain highly valued in the labour market, in Latin America as in more advanced OECD countries.

Table 4.1. Returns to schooling and to literacy proficiency

	Model 1	Model 2	Model 3	
	Years of schooling	Level 3 or above	Years of schooling	Level 3 or above
Chile	11.48 (0.55)	51.40 (7.36)	10.56 (0.68)	19.71 (6.81)
Ecuador	7.02 (0.50)	40.90 (9.35)	6.45 (0.54)	18.51 (9.30)
Mexico	7.91 (0.63)	49.91 (8.79)	7.38 (0.70)	19.81 (8.77)
Peru	5.95 (0.41)	53.87 (8.44)	5.54 (0.43)	30.99 (7.60)
OECD average	7.20 (0.08)	34.06 (0.89)	6.20 (0.09)	19.38 (0.94)
Bolivia (Urban)	5.80 (0.89)	9.34 (15.66)	5.80 (1.09)	4.13 (13.45)
Colombia (Urban)	8.43 (1.56)	50.32 (15.73)	8.64 (1.80)	12.50 (14.39)

Note: The sample is restricted to adults aged 25-54, in employment. Data for Bolivia and Colombia only refer to the adult population living in urban areas. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries. Coefficients have been multiplied by 100 in order to display the percentage change associated with either one additional year of schooling, or with being at Level 3 or above in literacy. When levels of literacy proficiency are included in the model, the omitted category is Level 1. Standard errors are reported in parenthesis.

Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/; World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step>.

Increasing adult skills through training

In the long run, skill levels will only be raised by investment in improving the quality of education, with the goal of equipping students with the skills the market requires and that could help Latin American economies to upgrade their production structure and improve their position in global value chains. This strategy, however, will not address the problems of adults already in the labour market who are struggling to find good jobs because of a lack of skills and are having to resort to self-employment or the informal sector.

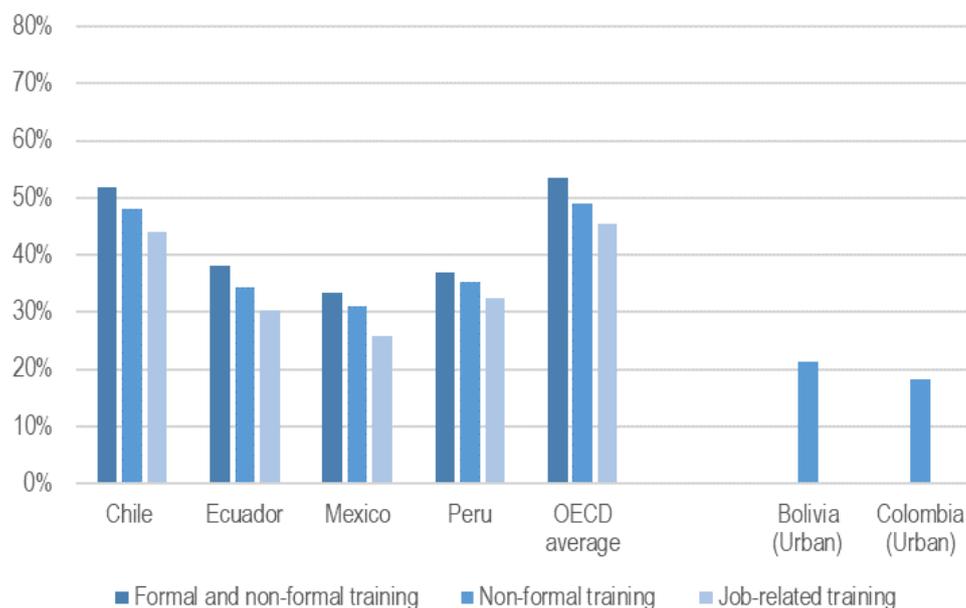
Investing in adult training can be an effective way to help the current labour force to improve their economic situation. Moreover, the benefits would not only be felt in the short term. Future generations will be increasingly subject to technological change and longer working lives. Inevitably, at some point in their careers, they will need to engage in training in order to keep their competencies up to date and meet the demands of the labour market and of society more broadly.

As discussed above, adults in Latin American countries report that they engage in on-the-job learning to a similar extent as adults in more economically advanced OECD countries. However, this does not seem to translate into a similar rate of participation in organised training and learning activities. PIAAC collects detailed information about training activity undertaken by respondents in the 12 months prior to the interview, distinguishing between formal activities (those leading to a formal qualification) and non-formal activities, as well as identifying activities that are not job-related. STEP asks a single question about

participation in any kind of training activity, explicitly excluding those that are part of the formal education system.

Figure 4.10 displays rates of participation in different forms of training, showing that adults in Latin American countries tend to participate less frequently than the OECD average. More than half of adults in OECD countries reported they had participated in any kind of training activity, formal or non-formal, with similar rates in Chile, but the share does not reach 40% in Ecuador, Mexico and Peru. The vast majority of training is non-formal. Data for Bolivia and Colombia are not fully comparable with other countries, because of the way the question is asked, but seem to indicate even lower rates of participation, at around 20%. Finally, among countries that participate in PIAAC, job-related activities are by far the most common form of training.

Figure 4.10. Participation among 25-54-year-olds in training, by training type



Note: The sample is restricted to adults aged 25-54. Data for Bolivia and Colombia only refer to the adult population living in urban areas. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/; World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step>.

Latin American countries do not differ much from the OECD average in what determines participation in training. Participation is more common for those in employment and for those with higher levels of skills and education. The degree of association between these individual traits and the probability of participating in any kind of training activities is very similar in Latin American and in other OECD countries (with the exception of Mexico, as far as literacy proficiency is concerned), as shown in Table 4.2.

Where Latin American countries differ from the OECD average is in the role played by employment status and by the sector in which adults are employed. As Figure 4.11 shows, rates of participation in training for adults with a regular employment contract do not differ greatly across countries, and are even higher in Chile, Ecuador and Peru than in the average OECD country participating in PIAAC. On the other hand, Latin American adults without a contract or who are self-employed participate much less in training than in other OECD countries.

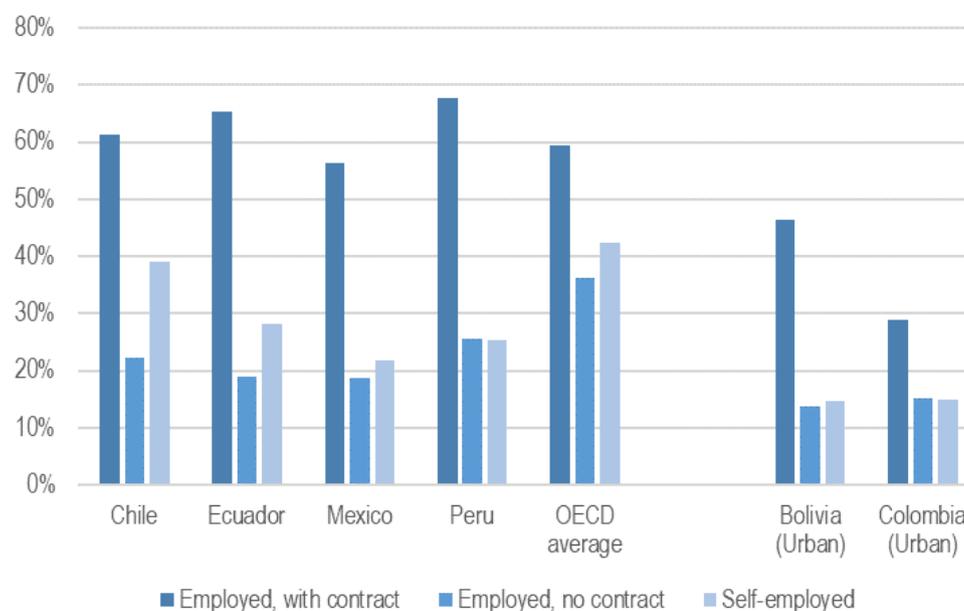
Table 4.2. Correlates of participation in training activities

	Years of schooling	Level 3 or above	Employed
Chile	3.19	14.48	11.03
	(0.52)	(5.87)	(4.55)
Ecuador	2.97	12.99	6.98
	(0.35)	(8.67)	(2.84)
Mexico	2.75	4.89	8.98
	(0.35)	(4.96)	(2.94)
Peru	2.47	14.06	10.13
	(0.29)	(6.09)	(2.75)
OECD average	3.27	12.79	17.22
	(0.09)	(0.94)	(0.55)

Note: The sample is restricted to adults aged 25-54. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries. Coefficients have been multiplied by 100 in order to display the percentage change associated with either one additional year of schooling, or with being at Level 3 or above in literacy. The regression model also controls for gender, a quadratic polynomial in age, and level of parental education. Standard errors are reported in parenthesis.

Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/.

Figure 4.11. Participation by 25-54-year-olds in non-formal training, by labour-market status



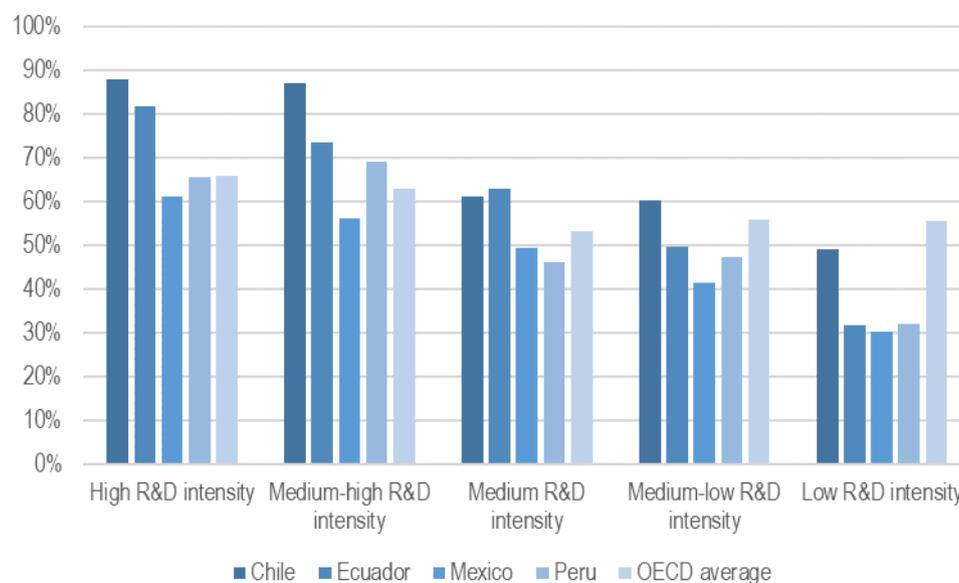
Note: The sample is restricted to adults aged 25-54, in employment. Data for Bolivia and Colombia only refer to the adult population living in urban areas. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/; World Bank (n.d.^[9]), *STEP Skills Measurement Program*, <https://microdata.worldbank.org/index.php/catalog/step>.

Similarly, workers in industries characterised as having high or medium-high R&D intensity have higher rates of participation in training in Chile, Ecuador and Peru than in the average OECD country. This advantage disappears for adults working in sectors with less R&D, however. In industries with low R&D intensity, 56% of workers in the average OECD country report having participated in training of some kind, compared to only 49% of workers in Chile and about 30% of workers in Ecuador, Mexico and Peru

(Figure 4.12). These results also hold in regression models that explicitly take into account the fact that workers in high-intensity R&D industries are also more likely to possess characteristics that are positively correlated with participation in training, such as higher levels of education and skills.

Figure 4.12. Participation by 25-54-year-olds in training, by industry R&D intensity



Note: The sample is restricted to adults aged 25-54, in employment. The OECD average refers to the average score of all OECD member countries and economies that participated in PIAAC, excluding Latin American countries.

Source: OECD (n.d.^[7]), *Survey of Adult Skills (PIAAC)*, www.oecd.org/skills/piaac/data/.

Conclusion

Investment in human capital can help Latin American countries to transition out of the “middle-income trap” and complete the process of convergence towards more advanced economies. This structural trap is evident in the distribution of jobs in Latin American economies, which is skewed towards occupations and sectors with a lower skill content and that invest less in R&D. These are typically low value-added jobs that signal the disadvantageous position of Latin American economies in global value chains.

Data from international skills assessments like PIAAC confirm that adults in Latin American countries lag significantly behind the average OECD country in proficiency, in spite of the large increases in formal educational attainment in recent decades. Data from PIAAC also contain useful information about the skills content of occupations and the economic outcomes associated with greater proficiency. The type of tasks that are required of workers in Latin American economies do not differ much from those required in more advanced economies in the OECD, signalling that demand for skills is high. This is confirmed by the large economic returns associated with literacy proficiency, not only in terms of wages, but also in terms of the likelihood of finding work in the formal economy – a large informal sector remains a worrying structural feature of Latin American economies, constituting a barrier to social and economic development and contribute to the high level of inequality observed in the region.

The high prevalence of the informal sector is also one factor that explains why Latin American countries lag behind in participation in adult training and lifelong learning activities, which could be an important means of upgrading the skills of the adult population and facilitating the transition to a different and more productive mix of economic activities.

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OECD Skills Studies

Skills in Latin America

INSIGHTS FROM THE SURVEY OF ADULT SKILLS (PIAAC)

Human capital is a key determinant of success for individuals and economies alike. Literacy and numeracy are key foundations for higher-order cognitive skills, while solving problems in technology-rich environments is increasingly important, as information and communications technology (ICT) spreads into all aspects of life. Despite remarkable recent increases in enrolment and educational attainment, the countries of Latin America lag behind in skills development among both secondary school students and the wider adult population. Young adults are still struggling in the labour market, while employers report skill shortages are a barrier to business. As countries in the region seek to shift their economies into higher value-added activities to escape the “middle-income trap”, they will need to improve the skills of their working-age population across the board. This report explores the situation of youth and adults in Latin America by using data from the Survey of Adult Skills (PIAAC) from Chile, Ecuador, Mexico and Peru and the Programme for International Student Assessment (PISA) from Argentina, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Mexico, Panama, Peru and Uruguay. These data have been supplemented by results from the World Bank STEP survey of adults living in urban areas of Bolivia and Colombia.



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